

JULY 25
ROMAN HOLIDAY By WILLIAM P. MCGIVERN

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NUMBER 7



AMAZING STORIES

Hated and hunted by all mankind
was the **SON OF THE
BLACK CHALICE**
By MILTON LESSER

AMAZING
STORIES

JULY
1952



MEN BEHIND AMAZING STORIES



Milton Lesser

THE "William and Mary" printed on the jacket in the above picture has nothing to do with pen names—it's a much-prized carry-over from my years at this country's second oldest institution of learning.

Actually, I learned a lot at W&M, but not through the usual channels. I worked my way through college via an odd assortment of jobs, ranging from hot-dog vendor at football games to quick-order cook at an all-night diner to bartender—to some well-remembered twelve-hour poker sessions. Unfortunately or otherwise, that didn't leave much time for books and the

cherished ivy halls. They tell me I majored in philosophy. I wouldn't know—not between back-bending work and a lot of ball-playing—but I do remember the dormitory bull sessions, the beer-parties, the days and evenings out in Matoaka Woods. Particularly the bull sessions, where we tore with gusto into everything from Berkley's *esse est percipi* to science-fiction's place in an atomic world. Yes, William and Mary had its handful of science-fiction devotees.

Those were the mid-forties. Prior to that, I'd spent most of my boyhood in
(Continued on third cover)

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SON OF THE BLACK CHALICE (Short novel—30,000) . . . by Milton Lassar 8
Illustrated by Ed Alexander

Deep within the bowels of the Black Asteroid lay the Chalice: mysterious source of eternal life. Could the son of John Hastings prevent its destruction...?

THE GIRL WITH THE GOLDEN EYES (Short—6,500) by Dean Evans 64
Illustrated by Gaylord Walker

Major Rand was in charge of this expedition to Venus and he was going to have discipline no matter how many beautiful undressed dames were flitting around!

ROMAN HOLIDAY (Novelette—11,000) by William P. McGivern 78
Illustrated by Tom Beecham

Caesar Simon's life lacked something: his dream of becoming a citizen of ancient Rome. And then he met the man who made that dream come true—in nightmare form!

TOO OLD TO DIE (Novelette—10,000) by Don Wilcox 98
Illustrated by Leo Ramon Summers

By sharing telepathy, Baetlas Bengworth and his grandson were as close to each other as two men could be. But an exploding bomb brought them far, far closer!

THE FROZEN TWELVE (Short—5,000) by Tadd Thomay 116
Illustrated by David Stone

All of us have the dream of some day breaking the bank at Monte Carlo. So did Leland Boona, until he tried roulette and Las Vegas—and almost destroyed Earth

MASTER OF THE UNIVERSE — IV (Short—5,000) Author Unborn 127
Illustrated by Ed Valigursky

You won't live long enough to meet LeRoy Peckard; he'll not be born for nearly two hundred years. But he's the man who will first lift mankind to the stars!

Front cover painting by Lawrance, illustrating a
scene from the story "Son of the Black Chalice"

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THE OBSERVATORY

by the Editor

A FEW DAYS ago our telephone rang and one of these outdoor type voices said, "Youse guys wouldn't like to pour some—uh—coffee into a author, would youse?" (Yes, Gwendolyn, writers talk like that.) We looked at the pile of manuscripts, at the clock, at the blonde in the next office on her way to the water-cooler, and said a few words (but not loud) about writers who call up and expect you to drop everything just to hear about their latest brain child. Besides this one would likely turn out to be the type who wrote his stories in pencil on both sides of the paper and put the commas on the outside of quotation marks....

MEANWHILE, there's this silence at the other end of the wire while we made up our wandering mind. We said lamely, "Well, we're kind of busy...", and the outdoor type voice said, "Look, don't do me any favors," and then we recognized that voice as one we hadn't heard in over a year and a half. Twenty minutes later the guy behind the voice was across a table from us at the corner tavern.

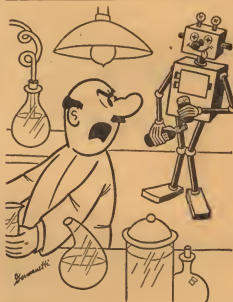
HIS NAME is William P. McGivern. He had returned the day before from eighteen months in France, Spain, Germany, Yugoslavia, Italy and adjacent territory. He looked thirty pounds lighter than when we'd last seen him, he puffed on a straight-stemmed briar with the casual authority characteristic of the Hemmingway-Steinbeck branch of pipe smokers, and the suit he was wearing carried a Spanish label. He looked relaxed and happy, narrow in the hips and broad in the mind. His way of laughing was still a kind of restrained bark; and if there were any changes in him at all, they were for the better.

HAD HE been doing any writing? That was one of our first questions, and his face took on that peculiar expression of mild apology and beatific satisfaction every writer feels when he's about to knock your eye out. "Just got word," he said, "that the *Saturday Evening Post* is buying serial rights to the book I just finished."

WE SAID, "Hey, how about that!" If we sounded a little dazed, it was because we were a little dazed. Some writers die and go to heaven, and some writers live and sell to the *Post*. The method is different but the result is the same. We asked him how it felt and what his first reactions were at the news and he told us at considerable length, as was to be expected, and we felt as good about it as he did. Well...almost.

AND AS he talked, the thought came that we had witnessed, during the ten years before this day, the mental and spiritual growth of a man. He had started as a writer of pulp stories for the science fiction markets, where you have to put together a great many words to match the standard of living of, say, a good auto mechanic. But to Bill it was not just another way of earning a living; he had his sights on a goal. Now, sitting there and listening to him, we realized he had reached it.

—HB



"Remember, I made you—and I can break you!"

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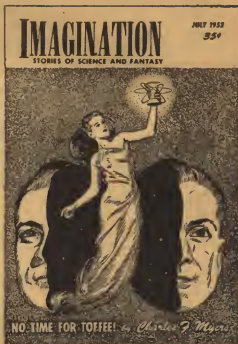
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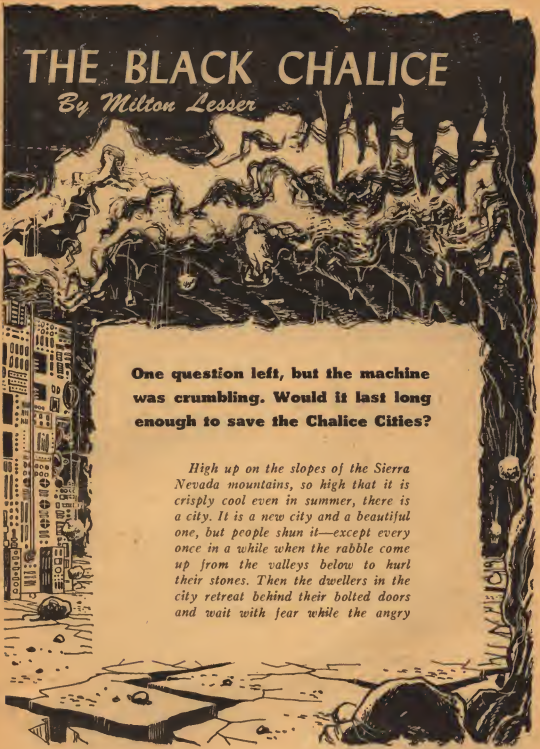
SON OF



"Run!" Hastings shouted, but the shaking earth threw her in the path of the flying debris

THE BLACK CHALICE

By Milton Lesser



**One question left, but the machine
was crumbling. Would it last long
enough to save the Chalice Cities?**

High up on the slopes of the Sierra Nevada mountains, so high that it is crisply cool even in summer, there is a city. It is a new city and a beautiful one, but people shun it—except every once in a while when the rabble come up from the valleys below to hurl their stones. Then the dwellers in the city retreat behind their bolted doors and wait with fear while the angry

mobs start the long trek down and back to their valleys. The dwellers in the city have learned to live with fear, for they are Children of the Chalice.

There is on Venus also such a city, and one on Mars. There are hamlets for the Children of the Chalice on the Jovian Moons. But not all of the Children live in the recommended places....

"I SEE HER, Mark. Oh, Mark, here comes Susan!"

The woman, whose name was Hannah Bentley, stood shivering near the window, squinting out into the gathering gloom. Night on Mars carries on its quick black wings a terrible cold, even in Syrtis Major City, the capital.

"Then come away from the window," Mark Bentley told his wife. "If you stay, Susan will know you were watching, and she'll know you were worried."

"Who's worried? Susan can take care of herself, Mark Bentley!"

"You're worried. Now come away from that window."

Hannah Bentley backed away from the thick glass, and then they could hear Susan inserting her key in the lock. A blast of frigid air swept in with Susan from the cold streets outside and the girl had to lean all her weight against the door to shut it.

"Hul-lo," she said, unzipping her furs.

"Her eye, Mark! Look at her eye! The poor thing—"

"I'm all right." Susan eluded her mother's embrace. "I just got into a fight, that's all."

"Your eye is blackened."

"Well, you should see them. Two of them, two boys. I won, Mama."

Mark Bentley nodded. "Of course you won. You're of the Chalice."

"But it isn't right, Mark. It isn't right that an eighteen-year-old girl should have to fight like a boy."

"She's of the Chalice." He always said it like that, Hannah Bentley knew, as if it were the answer to everything.

Susan blew on her hands to warm them. She had long and graceful hands, and they were like the rest of her. Tall and lithe, blossoming only recently into young womanhood. She was beautiful, and her mother had never been anything but plain. Her father was big and work-hardened, but homely. Perhaps the Chalice was responsible for that, too, for Susan Bentley's beauty.

"I don't care, Mark. Susan is a woman now and if that has to happen every time she goes off to visit a friend on the other side of town—"

"What can we do?"

"We can move out of Syrtis Major, that's what. To one of the Chalice Cities, where we belong."

"What? Segregated like that as if—as if we weren't human! Now you, Hannah, you're human...."

"So are you, Mark! You and Susan. Probably, you're more than human. But people don't understand that."

"They hate us!" Susan cried. "They hate us because we're better than they are. We're stronger and we live longer and we don't get hurt much and, if we're second generation, we're beautiful. Well, I hate them too."

"You mustn't say that, child."

"I can say what I want, I'm not a child any more. I hate them!"

* * *

JOHN HASTINGS knew that, twenty-five years before, his father had walked this same path. His father,

the first John Hastings, had blasted down upon the Black Asteroid, had been amazed that the place had air and warmth and Earth-normal gravity. Nor had he known that the Chalice awaited him—awaited his coming for countless eons—deep within the bowels of the artificial world.

John Hastings, the son, knew what to expect. But even then, his journey had been a dangerous one. Half the Solar System's military might was clustered in space around the black globe but, miraculously, he'd slipped through the circle of steel and flame. His feet click-clacked briskly on the smooth, hard surface, and he felt a wild triumph welling up within him.

The Black Asteroid! And the Chalice....

He found the door, marked off in phosphorescent white; he fingered the stud of smooth rock and then he pressed it.

Silence for the space of two heartbeats. Then a vague grinding sound, as some hidden mechanism deep within the small world began to function. In a moment, the door slid back. John Hastings walked down the stairs slowly, almost reverently. This was the place. It was here that he had received his birthright, and although the people hated him and his kind, he knew he was more than human. In that knowledge was a certain comfort, for he realized that the first true man must have been shunned and hated like this by his gnarled, hairy fellows.

The utter silence of deep space entered the crypt with him. Nothing stirred. Nothing moved. But the wall glowed with an unknown source of light, and in the center of the room stood the Chalice.

It wasn't black, not really. Only the artificial world was black, and from that the Chalice had received its name.

It did not matter. Not even the Chalice mattered. John Hastings sought what lay beyond the Chalice—if anything.

If anything—

There had to be something! He'd gambled his life on that, and ultimately, he knew, the life of his kind might depend on what he found.

On the walls he could see the ancient murals which some said had been painted there before the coming of man. Yet the murals showed men and the men stood near a spaceship—and there were men of Venus and Mars as well as of the Earth. Then, long ago—before the fifth planet had burst asunder to form the asteroid belt—the murals had been painted, but by whom? By other men, or so the theories said, by other men who had come before us and planted the seed for us and then departed.

And surely they must have left something behind with which to reap the harvest!

John Hastings looked, and found—nothing. There was the Chalice and the bank upon bank of machinery which yielded power to it. There were the murals and there was the silence. But that was all. Nothing else. The murals were vivid. Over the ages their coloring somehow had not faded, and they were truly tri-dimensional, although when he ran his hand over them, he found the surface flat.

But nothing else....

Wearily, he trudged back toward the stairway. His right foot was on the first step when something jarred the small world.

John Hastings stumbled, fell to hands and knees. When he got to his feet he knew that another spaceship had landed on the Black Asteroid, and he did not have to stretch his

imagination to suspect that those within it were hostile.

He eased a blaster from its pouch, crept slowly up the stairs. There were nine of them, he knew. His father had said that nine steps led down to the Chalice. Footsteps struck sharply against the stone, the sound of many men running.

John Hastings peered out. Instantly, something streaked by his head and formed a trickle of melted rock behind him. He ducked quickly back into the crypt, heard a harsh voice:

"Come out of there! Come on out of there or we'll come in after you!"

* * *

"WHAT DO you think you're doing, Susan?"

"You can see for yourself. I'm packing."

"Your father wants to stay here in Syrtis Major. He wants us to stay with him."

"We don't belong in Syrtis Major, Dad and me. You—"

"Oh, then you think I belong. I'm not one of you. Well, I'm not. But I love you, Susan, and I'm your mother."

"I'm sorry. I didn't mean it that way. Dad can stay if he wants. You *should* stay, you wouldn't like it living among the Children. But I'm getting out."

"Susan."

"I'm a woman now. You said so yourself. I want to go where I can be happy. I can't be happy here."

Susan snapped her valise shut with finality. "They hate me," she said. "So I guess I've learned to hate them back. Tell Dad—I didn't want to say goodbye to him. You worry all the time on the outside, Mama. But he worries inside, and that's worse."

"I'll tell him."

"And I'll write to you, Mama—after I'm settled. I don't know where. Here on Mars maybe, or in the Sierra Nevada Mountains on Earth."

Hannah Bentley said nothing. She crossed the room and embraced her daughter. There was so much she wanted to say, so much that the long, aching years had piled up for her to say. But her tongue felt stiff and swollen and suddenly her mouth was very dry. She watched her daughter leave, then ran to the window and stood there a long time until the furgarbed figure faded slowly from sight.

It was only then that Hannah Bentley began to cry.

* * *

JOHN HASTINGS crouched at the bottom step. Once a head had appeared briefly above him, but he'd snapped off a quick beam with his blaster; and the head had ducked back out of sight. He couldn't remain in the crypt indefinitely, but he was in no hurry to have them sear him with their weapons. He knew he would take a lot of killing, for a Child of the Chalice did not die easily. But they could hurt him and that was the same thing. He'd be captured and Government would throw the book at him for invading the crypt.

He fired another beam from his blaster to let them know he was still there, then he walked back into the crypt itself. Somewhere in there was a central lighting system for the artificial world, and if he could find that and damage it, he might have a chance to return to his ship in darkness. He knew it was hopeless, however. No one understood the machinery within the crypt, and he might as well be looking for a needle in a haystack on the dark side of Pluto.

After a time he gave it up. The

banks of machinery were encased completely in smooth, gleaming metal. He could not make head or tail out of them, he was only wasting time. He shrugged, stalked back to the nine stairs.

"Hello out there!"

"We hear you."

"You the police?"

"Damned right. Come on out, wise guy."

"Listen, this crypt is important, isn't it?"

"What do you think?"

"I know it is. Government has decided not to use it any more, but they don't want it destroyed. Right?"

"Yeah."

"Okay. I'm coming out. But I've set a baby atomic down here," John Hastings lied, "and if you lay a hand on me, I'm going to set it off by remote control. I'll blow this crypt to—"

"You wouldn't dare!"

"Wouldn't I? Don't try me."

"We'll blast as soon as you poke your head out."

"All right. Go ahead, blast. But I'm one of the Children, and you know we don't die fast, if at all. I'll be able to set this baby atomic off first."

He didn't wait for an answer, climbing the steps slowly, one at a time. He reached the top step, and no one fired. He could see them now in the dim light, a dozen men, all with their blasters trained on him.

The leader demanded: "How do we know you set that thing like you say?"

"You don't."

"Well, I think maybe we ought to take you—"

John Hastings shrugged, reached into a pocket of his jumper and kept his hand there. "All I have to do is press the button," he said.

He began walking.

They followed him, at a distance. He heard their feet clacking on the

hard surface, almost felt their eyes boring into his back. And the blasters. If even one of them became trigger-happy, his ruse wouldn't be worth a damn. And once they started firing he wouldn't have a chance, for the barren sphere offered utterly no protection.

He walked. The asteroid was only half a mile in diameter, and he could see his ship on the ridiculously near horizon. He saw the other ship too, a much larger one, a big, bloated, snub-nosed police cruiser.

He walked.

He reached his ship, heard a voice yelling behind him: "Shoot! Go on, kill the dirty liar! I just went down there, and he didn't plant a thing. Kill him before he gets inside that ship—"

He was all thumbs working on the air-lock lever and the blasters were firing, ripping into the hull and turning it cherry-red where they struck. They'd have the range in a moment—

He stormed inside, slammed the lock shut behind him. He saw them running for their own ship as he blasted off, acceleration pinning him down in his chair. He laughed wildly. Their bodies could not take acceleration the way his could, so let them chase him! He'd blast clear of the ring of ships and show them a few fancy turns that would crush them into bloody, shapeless things.

Now, as the police ship came up after him, he executed one of those turns. The Government cruiser was faster than his over-age scout ship, but it could not match the turn. He watched it streak off at a tangent, and he knew it would be a long time before they could turn and find him again. The acceleration was painful, but harmless—at least to one of the Children.

He knew he could get back to Earth, to his father, to Togoshira

Suuki, the Japanese-Venusian half-breed who had taught him so much—and to the rest of his people.

But he had found nothing.

CHAPTER II

"HELLO, Suuki. How's the boy?"

"Johnny! You have returned so fast." Suuki was not a boy. He'd been middle-aged when, together with John Hastings, Sr., he'd reached the Black Asteroid. Now he was an old man with dry, parchment-like skin and big round eyes. "And is your news good?"

Johnny shook his head. "No. Nothing, Suuki—there was nothing there."

"Sometimes a man fails to see what was not meant to be obvious...."

"I didn't miss anything. There was nothing to miss. Only the Chalice and that machinery, and the murals on the wall. Those damned murals. How did they know what we'd look like?"

"They planted a seed on the three planets, Johnny. If you place a tree-shrew on the ancient Earth, in the natural course of things a man would develop. A highly advanced biological science could do that."

"Where are they from, Suuki? Where?"

"Ahh—that we do not know! From the stars, Johnny, but there are many stars."

"And an age ago they left the crypt there so we could reach them. Some place there should be the secret of space-travel, interstellar travel. In the crypt, Suuki, only I didn't find it."

"I think you did well. Your examination was thorough, and it proves my point. There's nothing further to be found, nothing at all."

"I don't get it."

"We already have the secret of star-travel, if we could recognize it. That's all I will say, Johnny. Let me think."

"Okay. Hell, I'd better run up the street anyway and say hello to the folks. I'll bet they were worried."

"Worried? Aren't you the son of your father? What do they have to worry about? No, Johnny, they only worry about the future. We all worry about the future, since the Chalice....but I said I want to think."

Smiling, Johnny left the porch of Togoshira Suuki's neat little cottage and climbed the steep slope toward his folks' house. All the cottages were similar—neat and trim and inexpensive. Some seemed to hang precariously over high embankments, but the whole city had been engineered well, for many of the Children spent their entire lives there. Of all the inhabitants—other than wives or husbands of the new breed—Suuki alone was not of the Children. Yet it was Suuki who had planned the city, and Suuki, along with John Hastings, Sr., who governed the city.

FURTHER up along the slope, Johnny saw a crew of laborers clearing away some debris. Glass sprinkled the rocky road for twenty yards, rocks and timber were strewn everywhere. Half a dozen panting men shoveled the ruined building material into waiting wheelbarrows, and one tall man, broad across the shoulders and thick through the chest, seemed to work harder than the rest.

"I'm back, Pop," Johnny said.

"Son! We didn't expect you for—how did it go?"

"Lousy."

"Nothing?"

"Nothing."

"Well, at least you returned safely, and a lot of us doubted you'd do that." John Hastings leaned for a moment on the handle of his shovel. A cool wind swept down from the higher slopes, but he was bare-chested and

sweating. "They came up from the valley again last night," he said. "More of them than ever before, about a hundred. This time they had guns and a woman was wounded in the shoulder before we could drive them off."

Johnny frowned. "Why don't we fight back, Pop? I mean really fight back. Why don't we go down into the valleys and repay them in kind?"

"You figure it out. The police would love to get something on us, something big like that. The police are no exception—like everyone else, they hate us."

"Well, if the raids keep getting worse, we can't just sit here and take them."

"I don't see there's anything else we can do. The Children have to be careful, Johnny. You know that. We're too strong and we're too healthy—and, yes, we're too good-looking. If we competed, our men would be the finest athletes in the world, and even our women would hold their own with ordinary men. Our women would win all the prizes in all the beauty contests. We're never sick and we don't get tired easily and when we're injured we heal in a matter of hours. So the world is envious."

"Sometimes it backfires. Did you know that no ordinary person wants his sons to be big and strong and handsome, his daughters to be pretty? If they are, they can be mistaken for the Children, and they're liable to be stoned or beaten or worse. Johnny—Johnny! I didn't know I was starting all this twenty-five years ago. I couldn't know. I thought it would do good!"

"It's not your fault, Pop. The government thought it would do good, too. They knew only a small fraction of the population could visit the Chalice every generation, so they

started by giving out intelligence tests. The most intelligent people went to the Chalice. And since the mutation bred true, that would give the race increased intelligence for the next generation. Only it didn't work."

"No, it didn't work. The less intelligent members of the race thought they were being gyped out of something they should have had. I don't know, maybe they had a point there. Government next tried the sick people, the mental and physical cripples. But healthy folk hollered bloody murder, they thought they had a right to be more healthy. Pressure groups came next, and a whole series of minor revolutions. But you know all that. Final result: there are one million Children of the Chalice in the Solar System, hated, hunted, feared...."

"If only they could construct more of the Chalice, pop!"

Hastings laughed without mirth. "How? We don't understand the machine at all. If you give a spaceship to a bunch of Venusian aborigines and tell them to duplicate it, they won't know how. It's completely beyond them, because they haven't had the training and the scientific know-how. This is the same thing, only all humanity is your Venusian aborigine."

"Well, I still don't think the government acted wisely, banning the Chalice, yet not destroying it. It's out there in the asteroid belt, and everyone knows it. Hundreds have been killed trying to reach it every year—"

"And there'll be hundreds more. But the government's hands are tied. Don't you see, they can't destroy the Chalice! There's always the hope they'll be able to duplicate it and turn the whole race into supermen. Meanwhile, there are only a million of us, and we're hated."

"Well—"

"Forget it, Johnny. You must be tired, and your mother will want to see you. Why don't you go on to the house and I'll see you later."

Johnny nodded, climbed on up the road.

* * *

TEN THOUSAND feet below him, in one of the fertile valleys that brushes the lowest slopes of the Sierra Nevada mountains, an angry crowd gathered. There were farmers and there were townspeople, mostly men, but with enough women and older children to keep the mob excited.

"Look up! Go ahead, look up. You can see it shining there, the city they built. High and mighty, snooting down their noses at us."

"They'll get theirs some day. They'll get it!"

"Why wait for some day? Why not now, tonight? And why don't we give it to them?" The man who spoke brandished a club, and he looked like he knew how to use it.

"Yeah! Tonight—"

"Shh! Hold it. Here comes Bart Timmins; let's let him talk."

Timmins stalked arrogantly through the village square and people moved out of his way. Wrapped around his forehead was a dirty bandage, but he carried it like a badge of honor. His shoulders were massive, he had a barrel-chest, he wore knee-length walking shorts, and his legs below them were gnarled and muscular. His face might have been pleasant in a rough, rugged sort of way, except that he was prone to leer too much.

"Sure, tonight!" he cried, mounting the steps of the Municipal Building. "If we go up in force, we can clean that city out."

"What do you mean, clean it out?"

"I mean mess it up, but good. I

mean tear down some houses and maybe hurt some people and take some of their best men prisoner."

"What will we do that for, Mr. Timmins?"

"You afraid, Peters?" Timmins smiled coldly.

"N-no. But what good will it do us?"

"Here's what. If we can hold some hostages, if we can hold enough of them, we can chase the rest of 'em out of our neck of the woods. That is, if they want their friends back alive."

"That ain't legal."

"Is that so? It isn't even nice, my friend, but it will work. Sure, it's not legal, but wake up to the facts of life. Whenever we do something to the Children—" Timmins spat the word—"the police sort of turn their heads the other way. I say tonight, and I say we do all of that."

"You really hate them, don't you Mr. Timmins?"

"What's the matter, don't you?"

"Yeah, but with you it's different."

Timmins growled, told the man to forget it. Then he repeated. "I say tonight! We'll get them good tonight."

The crowd roared, and it was a long time before they quieted down. Then someone demanded: "How will we get there between now and tonight? It's ten thousand feet, almost straight up—"

"I've got a friend," said Timmins, "who owns an airport four, five miles from here. He has a dozen 'copters, enough room for a couple hundred of us. We'll get there, all right. We'll come down about midnight—and we'll be *above* the city." Timmins chuckled.

"Above?"

"That's what I said, above. They'll never expect that, they don't guard

the upper regions. We'll have what we want before they know what hit them."

"I don't think that's such a hot idea," someone said.

It surprised Timmins. He scowled into the crowd, squinting against the strong sunlight. "Who said that?"

"I did." It was a girl. She was tall, as tall as Timmins himself, and quite beautiful. She came forward and the crowd parted for her. She mounted the stairs and stood directly in front of Timmins, hands on hips.

"And who the hell are you?"

"I'm a stranger, Mr. Timmins. Just got here today. But I think your idea stinks."

"Can you suggest a better one?"

"I'm not going to try. I think the whole business, in general, stinks."

"Is that so?" Timmins glared ominously.

"Yes."

THERE WAS a silence. Someone in the crowd coughed and someone else tittered when the girl leered right back at Timmins and did not come off second best. Finally, he said: "What's a pretty girl like you doing traveling by yourself?"

"Nothing. Just traveling."

"Yes? Well, you're pretty enough to be one of the—"

"I never said I wasn't."

Stirring in the crowd, nervous, angry. And Timmins: "Are you?"

"Why don't you figure that out for yourself?"

"Listen, Miss—uh—"

"Bentley. Susan Bentley."

"Okay, Miss Bentley. Okay, Susie! Stop beating around the bush like that, Susie. Are you one of them?"

"I could be, at that, couldn't I? Tell me, Mr. Timmins, do you think I'm pretty enough?"

"Hell, yes. Only you're still hedging."

"I told you to find out for yourself."

"How do you suggest I do that? There's no identifying mark on the Children, although I think there ought to be one. I knew a pretty girl around here who once got beat up good because someone figured she was one of the Children. Turned out she wasn't, but we didn't learn till later."

"There's a way you can find out."

"How?"

"Hit me."

"Huh?"

"I said, hit me. Go ahead, are you afraid? The Children are strong, you know that. One of their men could take care of five or six like you, and even one of their women should be more than a match for you."

"I don't hit ladies."

"You're afraid."

"Listen—"

"You're afraid. If you hit me, and if I hit you back, harder, you wouldn't be such a big hero in front of all these people. Go ahead, hit me."

"Beat it! Scram before I change my mind."

"You're afraid." *Careful, Susan*, the girl thought. *Don't goad him too far, or he's liable to do just that. You're always ornery, and you always have a chip on your shoulder. You shouldn't have come up here and talked like this in the first place, but now that you have, you'd better convince them you're not one of the Children. Or else you'll never be able to warn those people in the city...*

Someone in the crowd snickered. Clearly, the girl was making a fool of Timmins. It never took him long to lose his temper, and now he swung his open palm and struck her across the face.

She stumbled and fell and when she got to her feet again, she was sniffling. "You—hit—me!" she wailed. "You hit me! I'm not one of them, I was only joking. . . ."

She stood there, sniffling.

"Christ, lady, I'm sorry. It's a fool joke for you to pull; how was I to know?"

"Well, I was just joking. I even thought your idea was a good one, but you hit me."

"Christ, lady." Timmins patted her shoulder awkwardly. It failed to stop her sniffling, and everyone was laughing.

"Did you really like my idea?"

"Y-yes. Yes, I did. . . ."

"Well, if you stop crying, and if you promise not to get in the way, we'll take you up to the mountains with us."

"Really?" She stopped her sniffling, stared at him wide-eyed.

"Sure. Sure, lady."

"Oh, thank you, Mr. Timmins." No one was close enough to see that Timmins's hand had cut the girl's lip badly. No one was close enough to see that, nor to see that the bleeding had stopped almost at once and that now the cut could not even be seen.

* * *

AFTER coffee, John Hastings leaned back and tamped tobacco into his pipe, lighting it and blowing blue clouds of smoke up at the ceiling. He looked at his son and he saw himself, twenty-five years before. His wife, Ellen, must have seen that, too, for she looked at both of them and smiled.

Togoshira Suuki grinned crookedly. His long white hair was as fine as flax and he let it fall to his shoulders, Venusian Upland fashion. It was the only custom of his ancient people he

affected. "We are right back where we started from, are we not?"

"Yeah," Johnny admitted. "I guess so."

Ellen shook her head. Even now, nearing her fiftieth birthday, she was a beautiful woman. Her hair was graying and there were little wrinkles around her eyes and her lips, but still her face was noble enough to belong to one of the Children, although she was a perfectly normal human woman and she had never been within the Chalice. "No, we've learned something. We've learned there's nothing else to be found."

"A lot of good that does us," Johnny told her.

But Suuki grinned again. "Do not be too certain of that. Your mother seems to agree with what I said before—there may be more in what we already know than meets the eye. I am beginning to understand something. . . . Tell me, Johnny, how did you get away from the police?"

"Why, I told them I had a baby atomic, and—"

"I don't mean that. I mean afterwards."

"I got into my ship and blasted off. I'm one of the Children, so I can take acceleration they can't get near."

"Precisely."

"Precisely?" This was the elder John Hastings. "I don't see what you're driving at, Suuki."

"Nor am I sure that I do. But one of the Children can take a great deal of acceleration. Is that correct?"

"Certainly."

"And we want to go to the stars, is that correct?"

"You're damned right it is!" Johnny cried eagerly. "If we can do that, if we can get out of the solar system and reach the stars, maybe we'll be able to find the earlier race

of humans who planted the Chalice here. And planted us, too. If they still exist, they've been living with the Chalice a long time, so maybe they'll know what to do about our trouble. *If* we could get to the stars."

"But we can't?"

"No, we can't."

"Why not?" Suuki demanded.

"Oh, we can construct an interstellar drive, all right. We already have it in theory, because Einstein's light-speed maximum doesn't apply when you're dealing with sub-space. But that's not the answer. No human being could survive the acceleration necessary to reach translight speed and, so far, no one can construct anything to ward off that acceleration."

Suuki nodded. "That, I believe, is beyond the powers of any science. It is something which cannot be done."

"Then it's hopeless?"

"I did not say that. The answer has been staring us in the face for so long that we missed it altogether. What's the old expression about not seeing the forest for the trees? Consider: the Children cannot be injured readily. When they are, they heal almost instantly. Have you ever heard of one of the Children being injured *at all* by acceleration?"

"No," Hastings said, and Johnny nodded.

"They aren't, that's why! There's something in the regenerative powers that the Chalice gives you that renders acceleration harmless. I'm sure of it. There is pain, yes, there is great pain, but any damage that forced acceleration does to the tissues of the Children is counteracted instantly. Probably, there is constant recreation of the damaged tissue, all the way down to the atomic level."

"Do you really think..." Johnny began, and his mother: "If that's the answer..."

"It is the answer," said Suuki. "I am certain it is. We can construct a starship and the Children can withstand the acceleration. It will merely be necessary, during the brief periods of acceleration and deceleration that bring you into and takes you out of sub-space, to induce slumber. That way pain will be avoided—but we can travel to the stars!"

"To the stars..."

THEY WERE still talking about it, hours later, when someone pounded on their door. Johnny said he would get it, crossing to the door with long-legged strides. He opened it and saw a girl, sweating, dirty, disheveled. She might have been pretty, but under all that grime he couldn't tell.

"I'm looking for John Hastings!"

"Which one? There are two, senior and junior."

"I don't care! Whoever runs this city."

"That would be my father. Hey, Pop!"

"Coming, Johnny—"

"This girl wants to see you."

"Mr. Hastings?" And, when he nodded, it all came out in one gushing torrent: "I was down in the village and a mob decided to attack you up here, only they're going to do it from above you and not below, so I went with them and broke away quick to warn you before they strike."

"Huh? What are you talking about, young lady? Attack from above instead of below? Who? What for? You mean one of those mobs of rioters? We meet up with that all the time."

"More than that, Mr. Hastings! It's big this time and they came up in 'copters, and they plan on taking some of you hostages so they can tell the rest to clear out of their part of the country."

"Who are you, young lady? This all sounds so wild and incredible, an organized attack like that—"

"Please! You haven't time. Do you have soldiers?"

"Of course. But they're guarding the passes leading up from below."

"Turn them around, then. The men of the valley will be attacking from above your city."

"How do we know this isn't a trick?" John Hastings had a point there, his son knew. The villagers had attempted every type of subterfuge in the past. They might—they just might—stoop this low, sending a girl with a message that would leave the passes unguarded.

Wordless, the girl reached into her pocket, withdrew a knife. She pressed the button, watched the blade snap out. Without pausing, she ran the knife across her forearm, wincing as she did so. A trickle of blood started from the cut, then stopped flowing at once. The cut became a thin white line which, even as they looked, disappeared.

"I'm one of the Children," she said. "Susan Bentley. Maybe you knew my father—"

"Mark Bentley? Sure I knew him, years ago. She's legitimate, Johnny."

"Then what are we waiting for?" Johnny was already running outside, calling back over his shoulder: "Get the guard-posts on the phone. Bring them around to the upper slopes. I'm taking a run down there to see that they move fast."

Then he was charging quickly down the hill, without waiting for an answer. In five minutes he reached the first guard-post, not much more than an oversized lean-to set into a niche in the rock, half-hidden by the scrubby trees which clung to the face of the mountain hundreds of feet above the timber line.

"Did you get the call?"

"Sure did. On our way up now—"

And Johnny continued running down the hill.

BY THE time he reached the fourth and final guard-post, he heard the distant sounds of fighting up the slope behind him, the thud-thud-thud of pounding feet, the shout of men in battle, the sibilant hissing of blasters, the occasional flat, cracking sound of an ancient explosive rifle. Two guards were climbing out of their lean-to at the final post, and one of them nodded curtly but eloquently up the slope. "They mean business this time," he said.

Briefly, Johnny was aware that they followed him up the hill, and then he was pounding back the way he had come. As he ran, he saw the lights winking off in the trim little cottages on either side of him. Women and children would be huddling fearfully within their homes, but the men-folk were trotting up the hill in twos and threes, armed for the most part only with crude clubs. None of them spoke; talk was superfluous. Grimly, they climbed the hill.

Johnny unsheathed his blaster as he rounded the last bend in the steep path. He could see dense clouds of smoke rising under the light of the full moon. Three houses in a row had been fired, and the flames darted and licked angrily, fanned by the mountain wind.

One of the houses was his own!

The fighting centered about it, too. The defenders seemed a pitifully thin line, and they were being forced back, too. Physically, man for man, the Children certainly had the edge, and they were not outnumbered. But none of the Children could receive permits for any weapons more potent than explosive rifles. Only a few, like

Johnny, used unlicensed blasters. And the result was a tremendous deficit in fire-power.

The thin line of defenders crept back toward the three burning houses. There the line held for a moment, while blasting beams seared air all around them and sought them out. Then the line broke. It was inevitable, for the line could not retreat in an orderly fashion, not through the flaming ruins of the three cottages. Instead, the line broke and curled around the flames rapidly. By the time they reached the other side, they were running in confusion, and only an occasional quick volley of rifle fire answered back the steady hissing of the blasters.

Johnny plunged ahead, tried to fill the breach with his own weapon. Heat from the cottage—his own burning home—was intense, but he crouched down a dozen yards behind the stone chimney and fired blindly ahead of him. Once he heard someone scream, and he did not like the sound of a man dying in agony. Still the invaders had come to destroy their homes here in the mountain city....

In the harsh light of the flames, Johnny saw some of the invaders snaking around the cottage and plunging down the hill to left and right of him. He fired once, and then his blaster jammed and he crouched there with it, helplessly. They streamed down the hill on both sides of him, they struck with clubs and threw stones and he could hear glass shattering and women screaming. Sobbing, Johnny stood up, silhouetted briefly against the flames. He drew fire, three beams which soared harmlessly over his head—and then he plunged into one group of the invaders.

He met them with flailing fists, sent four of them reeling with his first onslaught. Oddly, he noted that

they no longer made their way down the hill. Instead, the two lines had turned back and in toward the burning houses, and now swept up to the very crest of the hill. In his blind fury, Johnny did not realize they could have blasted him down with consummate ease; nor did he have time to ponder why they withdrew.

When the reason did occur to him, it was too late. They ringed him in completely, with his back to the raging flames—and only then did someone fire at him. The blaster caught him squarely in the chest and he tottered for a moment before tumbling forward on his face. He was conscious long enough after that to realize that the beam had been of full intensity and would have destroyed an ordinary man.

But he was one of the Children, and he would survive. In hours, the mechanisms of regeneration within every cell of his body would begin to function and, before the sun rose, he would be good as new. Except that they were taking him with them....

Ten minutes later, the 'copters rose smoothly from their perches further up the mountain. They winged silently into the valley below.

CHAPTER III

"WE'LL BUILD again," John Hastings said wearily, running a hand through his graying hair.

"We'll always build again," someone told him.

"What can we do? Do you think I like it? Do you—they have my son. They have Johnny!"

Susan Bentley tapped his arm, and when he turned around she said: "It's my fault."

"What do you mean, it's your fault? Don't blame yourself, child. If you hadn't warned us there's no telling

what would have happened. And afterwards you fought like a man—"

"I have always had to fight like a man. But it's my fault. I should have broken away to warn you sooner, but I couldn't."

"Then it's not your fault."

"I knew their raid was aimed at taking a hostage. Someone important. One of them must have recognized Johnny. They've been up here before, haven't they?"

"Of course. And Johnny would venture every now and then down into the valley, anyway. A lot of the Children are bitter, but Johnny's not. He even tried to make friends down in the valley, and there was a girl once—"

"What happened?"

"I'm not sure. He never spoke much about it. He dated her a few times, and a man named Timmins, I think, didn't like it. She was Timmins' girl friend and Johnny took her away from him. They had Johnny in jail on a trumped-up charge for six months. He wouldn't look at the girl after that, but she wouldn't look at this Timmins."

"Oh."

"Oh, nothing. It still didn't make him bitter. But that's not the point. They can't keep Johnny like that, it's not legal. Anyway, what's their purpose?"

"They're going to issue an ultimatum. If you want your son back alive, you're going to have to leave this city."

"Why me?"

"No, not just you. You don't understand, Mr. Hastings. If you want to see Johnny again, the whole city will have to be evacuated. Permanently."

"What? That's fantastic! I know they don't like us, but what have they got against our city?"

"They're just envious, that's all.

They hate us. They always have and they always will. Only now they have a weapon on their side."

"It isn't legal, Susan. They can't kidnap Johnny and—"

"Your son is how old—twenty-three?—well, the government will hardly look on that as kidnapping. First, because even the government doesn't hold any love for the Children, and second because they'll probably shift the blame for the fight on your people."

"All right. We've got to get him back."

"How? By raiding the valley? Then you'll really be in hot water."

"Umm-mm. Well, I'll see the sheriff down in the valley. He isn't a part of it—"

"No, but if he's anything like the law-officers on Mars, he'll shut his eyes every time."

"Well, I've got to try."

"Good luck," Susan said. "You'll need it."

THE SHERIFF lived in a small ranch house at the east end of the valley. He was a tall man and stout. He had a half-smoked cigar clamped between his yellowed teeth, and it looked like it might have been there for days.

"You're a stranger, ain't yuh?" he grunted.

"Yes."

"Where from?"

Hastings pointed up toward the distant mountains.

"One of the Children?"

"Yes."

Another grunt. "Wacha want?"

"My son. There was a raid on our city, and they kidnapped my son, name of John Hastings, same as mine."

"Don't know about that."

"Do you know about the raid?"

The sheriff yawned hugely. "There's always talk, Mister. I don't know nothing."

"Weren't there some injured men in the valley today?"

"Sure. Always are. Tough breed, all the time fighting. So what?"

"We injured them. They were up in the mountains and—"

"Oh, then you admit it? You attacked the villagers, eh? I didn't get no complaints, mind you, Mister, I didn't get none. But if I do, I'll know where to go, because you admitted it."

Hastings shrugged. "If there was a raid, would you know who'd be in charge?"

"Beats me. The whole thing, I mean. I don't know of any raid, Mister. Maybe you better go climb your mountain and stay put up there."

"Thanks," John Hastings said. "You've been a great help."

The sheriff lit his cigar. "Don't mention it."

* * *

TIMMINS strutted about the room like a rooster. "We got 'em now, men! Oh, we got 'em good. They'll have to clear out if they know what's good for them."

"I hope so," a little man chuckled. "That'll be just fine. Say, did anyone see about that young feller?" He shook his head sadly. "Hurt bad."

"Him?" Timmins laughed. "Hurt bad? I guess you don't know the Children too well. Nothing like that can hurt 'em for long. They heal, Marty. They heal quick. They're inhuman, that's what. Well, okay, let's go take a look."

Timmins strode off into a hallway, reached a door, opened it. The man named Marty gasped. "He's sitting up!"

"Sure he is. How do you feel, Hastings?"

"I'm fine," Johnny said.

"We shot him clear through the chest..." This was Marty.

"Sure," Timmins leered. "Only he healed. They always healed, every time I saw it happen. What's left of your wound, Hastings?"

"I don't know," Johnny told him. "A little white scar, I guess. I haven't looked."

Johnny smiled when the man named Marty unbuttoned his shirt and peered at his chest. "Christ, yeah," he said. "Just a little white scar!"

"See?" Timmins was laughing. Something about it struck him very funny, and he didn't stop laughing for a long time.

Abruptly, Johnny stood up. "I remember you, Timmins. We had a little trouble once—but that's not why you've taken me. What do you want me for?"

"You'll find out. We're going to bargain with your people. If they leave that city of theirs, we'll let you go. If they don't, in a certain amount of time—well, you figure it out."

"Do you think they'll sacrifice their whole city, just for me? Where would they go?"

"That isn't my problem. And to answer your first question, they better."

"You're insane!" Johnny took a quick step toward the thick-chested man, but Timmins pulled out a blaster and motioned him back. "Take it easy. You're liable to be here a long time, and we don't want to keep shooting you up and watching you heal again."

"IT CAME," John Hastings said.

Ellen peered over her husband's shoulder, and Susan was there too.

Togoshira Suuki sat off at the far end of the room—the living room of his own cottage, where the Hastings had come to live since the burning.

Hastings read: "As you know, we have John Hastings, Jr., a prisoner. If you agree to evacuate your city, permanently, we won't harm him. If you don't, we can't be responsible. You have two weeks to decide, and we want your answer not in words, but in action."

It wasn't signed.

"Could you go to the police with that?" Ellen demanded. "It proves they took Johnny—"

Hastings frowned. "They're too smart for that. It doesn't prove a thing. There's no signature, it's just a plain piece of paper and an ordinary typewriter. We could have forged the whole thing."

"Anyway," said Susan, "the law won't help. You found that out when you visited the sheriff, didn't you Mr. Hastings?"

"Yes. I did, but that leaves us with nothing."

Suuki stretched his small, thin body. "There are always means to an end, John. The trouble now is that you have been considering nothing but this problem ever since it happened, and you've lost all perspective."

"Hell, maybe you have something there," Hastings admitted, smiling in spite of himself. "Still, Johnny's my boy—"

"And we all want to get him back. The first thing you must concede, however, is that your son can take care of himself. It is not quite so urgent as you indicate. Now let's forget it completely, at least for a few minutes. I have something important to tell you, John."

"Go ahead." But, clearly, Hastings wasn't very interested.

"Johnny's visit to the Black Asteroid was the final proof I needed. There is nothing necessary for interstellar travel beyond the Children themselves. Theoretically, we should be able to take a spaceship from space to sub-space, and although the acceleration would kill an ordinary man, it would not harm one of the Children, provided he had been put into a deep, hypnotic sleep. We still have your old ship up on the higher slopes, John. I should like your permission to convert it to the first interstellar spaceship."

Hastings almost jumped from his chair. "Why didn't you tell me? Of course you have my permission! Star-travel, that's what we've wanted all along. If we could find the race of pre-humans who put that Chalice out there, and—"

"There's still Johnny," Ellen reminded him.

"Yes." Hastings sobered quickly. "Well, I could take this above the sheriff's head and go to higher authorities."

Susan shook her head. "It wouldn't do any good."

And Suuki: "The young lady is right."

"Okay. Then we can mass ourselves in force and attack the valley. We can pay them back in kind and see what happens—"

"No." Suuki was quite firm. "If you did that and didn't find Johnny, they would kill him. Further, the law would then have an excuse to sanction what those of the valleys desire...."

"I think I have an idea," Susan said. "Look: when I went up by 'copter with the people of the valley, they didn't know I was one of the Children. They still don't. They had casualties up here, we buried three of their dead. I sneaked away and

warned you in the darkness, but they didn't know that. Instead, they probably think it was four dead, not three. Okay so far?"

"You bet. Let's hear more."

"Well, there isn't much. I can go down into the valley and see if I can find Johnny, that's all. They won't suspect me, they will suspect anyone else. I'll leave in the morning."

"We can't ask you to do something like that. There'd be danger, and Johnny isn't your responsibility. No—"

"That's ridiculous. He's one of the Children, so am I. If we don't help each other..."

Susan stood there, hands on hips. She didn't look like she'd take no for an answer.

Suuki grinned. "Let her go, John. I think she can help."

Ellen came to Susan, took her hand and squeezed it. "I don't want anything to happen to you," she said. "But if you can help Johnny—"

"I can help him, Mrs. Hastings. I want to help him."

And Suuki chuckled. "Maybe by the time Johnny comes back, I'll have that interstellar ship ready. It's a long way to the stars, John, but we can make it."

FIVE THOUSAND feet below *Paseo Diablo*—the Walk of the Devil—lay the town which received its name from the pass high above it. And now Susan Bentley walked boldly down *Paseo Diablo's* main street, looking for a familiar face. She was tired and her clothes were in tatters, for although the Children had seen her down as far as the mountain pass, she had gone on from there alone and on foot. She looked the part of a wanderer now, she looked as if she had been lost and had struggled down the steep slopes to the valley.

No one stared at her twice in the bright sunshine. Her beauty would have set her apart, but the dirt and the grime covered it, and her identity as one of the Children was, at least for the moment, perfectly concealed.

Bart Timmins saw her before she saw him. Coming out of the general store with a sack of supplies, he squinted down the street and started running. "Susie!" he cried. "You're Susan Bentley."

Susan smiled weakly. "Hello. Mr. Timmins. I—I never thought I'd make it down to the valley."

"You didn't think so? We thought you were dead. And I held myself personally responsible. I never should have allowed a delicate thing like you to go up into the hills with us."

"It doesn't matter."

"Umm-mm, yes. You're safe now."

"You see, I got lost in all that fighting, and next thing I knew, I was stuck in—in that city. It was dark and I sneaked out along one of the streets until I came to a mountain trail. I started down, but I guess it took longer than I thought. I—haven't eaten—"

And Susan began to slump forward. In truth, she felt fine. She'd had a hearty meal before leaving the city, and her amazing powers of regeneration had compensated for the wearying trek down the face of the mountain. But she'd never let Bart Timmins know that. She raised a hand half way to her head, moaned a little, and slumped forward.

Timmins reached her in two quick strides and got his hands under her arms as she fell. He lifted her easily and, cradling her in his arms, walked toward his house, two streets away. Walking thus, he looked down at her. A lovely girl, more beautiful than any in *Paseo Diablo*, beautiful enough to

be one of the Children. But that was ridiculous and he knew it: one of the Children did not faint from over-exertion!

The girl had short-cropped, curly auburn hair. Her skin was clear and white and, despite her exhaustion, he saw a rosy glow in her cheeks. Her lips were sensuous and appealing without lip rouge; Timmins suddenly found himself thinking it would be very nice indeed to kiss her. Well, that could come later. He was pleased too with the up-tilted swell of her breasts under the thin, tattered jumper, and the feel of her legs, cradled over his left arm as he carried her, was pleasant.

Once he leaned down to brush his lips experimentally across her face, but at that moment she stirred restlessly, squirmed, sighed, and half-opened her eyes.

"You take it easy, kid," Timmins said, breathing hard. "Bart will take care of you."

HE CARRIED her that way to his house and, inside, deposited her on a sofa. Returning from the bathroom, he bathed her face with a cold wet cloth and presently she was sitting up.

"Where am I?" she said, smiling vaguely. *That pig, if he tries to touch me again. I only hope I can hold my temper....*

"Don't you worry, honey. I brought you home, and first thing I'm going to do is give you some good food. I'll bet you need it."

"I'll say," Susan told him, flashing a smile. "I don't know what I would have done if you hadn't found me."

"Well, I did, so stop your worrying."

"Did you carry me all the way?"

"Sure."

"My, you must be *strong*!"

"Well, shucks—"

"Yes, you must. Whenever there's something to be done in this town, I'd bet you take it over."

"Well, not everything, Susie. But then, if a man's born a leader, then he's a leader, I always say."

"Like that time we went up the mountain, is that what you mean? You were the leader then. Oh, I'm sure you did a good job."

"Well, we accomplished what we set out for."

"Me, I never did find out what that was. I had to get lost. I hope I didn't get in the way up there or anything."

"Naw! Not at all, Susie. And I'm sure glad you're safe."

"That plan you mentioned when I came into Paseo Diablo for the first time, were you able to carry it out? My guess is you were: if you start out to do something, Mr. Timmins, then you do it. That's the kind of man you are."

"As a matter of fact, we *were* successful, honey. We got our hostage, and everything's going according to plan."

"Really? What does he look like? He must be horrible, one of those Children."

"It's all according to what you think—say! I can show him to you if you want." Timmins' craggy features were screwed into a little-boy grin. "Do you want to see my hostage, Susie?"

"Oh—I'd be afraid! Unless, unless—"

"What? Go ahead, say it."

"Unless I was sure you could protect me."

"Sure, Susie. I can protect you. I'll be right there. Want to take a look-see?"

Susan stood up, stretched, smoothed out her tattered jumper. She weaved groggily, leaned against Timmins'

broad chest and cuddled there for a moment. "That feels good," she said, "because you're so strong."

He stroked her hair, said: "You must be tired. Maybe you'd like to rest first."

"No. No thanks. I am interested, and as long as you're there with me—"

Beaming, Bart Timmins led her from the room and down the flight of steps to the basement.

* * *

JOHNNY had studied his cell until he knew every inch of it by heart. Ten feet long, twelve feet wide, a window high up on one wall, out of his reach. A door, locked from the outside. Cement floor and cement walls, a cot, a chair, a wash-stall. Quite an effective prison, without any possibility of escape.

He wondered if the Children had received Timmins' message. It didn't really matter, he told himself over and over again—no matter what happened to him, they would not give up their city. They couldn't, for then they'd have no place else to live. He only hoped they wouldn't try anything foolish. Even a small-scale raid on Paseo Diablo by the Children would be a valid excuse for the law to step in, and then there'd be no telling what might happen....

Suddenly, so suddenly that it startled him, Johnny heard a key grating in the lock. An instant later, the door swung in, and as he stood up to face it Johnny saw Bart Timmins, a blaster in his hands. But behind him was the girl who had warned them—what was her name? Susan Bentley. Then had she, after all, been a Judas? But no, that didn't make sense, and now he could see her cau-

tioning him to silence from behind Timmins' shoulder. Probably she did not want him to show any recognition. Well, until he found out what was happening, he'd play the game her way.

"Visitor for you," Timmins leered. "Just sit right where you are, Hastings. I don't want you to scare her, see?"

"Okay, I'm not moving."

"She almost got killed in your lousy city, Hastings. Got lost up in the mountains, had to find her way down all by herself."

"He doesn't look so terrible," Susan said. "Can I go closer and look?"

Timmins shrugged. "Okay, but be careful. You never know what one of them is liable to do. Heck, you won't see anything so strange, anyway—they look human, the Children do."

"Well, I want to see for myself." And moving slowly, Susan came toward Johnny. Finally, she stood not a yard away from him, facing him directly so that Timmins could not see her face.

"Careful," Timmins warned. "Careful."

Then Susan's lips were moving, and Johnny watched. At first he didn't get it, but he knew she was forming two words again and again, silently, using only her lips. Finally, it made sense.

Grab me. Grab me.

Johnny did, in one darting motion. He grasped her shoulders, spun her around, circled her neck with his arm. She began to whimper, struggling futilely against his hold.

"Damn you!" Timmins screamed. "Leave her alone."

Susan gurgled.

"I won't hurt her," Johnny said. "But I'm walking out of here with her in front of me. You won't dare shoot.

You go first, Timmins. Come on, move. We'll follow you up the stairs."

Timmins made a lewd gesture. "I'm not budging. I know you, Hastings, you won't stand there and strangle the girl. Sort of an impasse, hunh?"

It was, and Johnny knew it. Timmins had called his bluff, and he stood there, helplessly. An impasse for the moment, but unless Johnny could think of something, Timmins wouldn't leave it that way long.

Timmins took a step toward them, the blaster raised. "I'm coming for you, Hastings. Why don't you just leave the girl alone and sit down? I'll forget all about what you tried." Timmins took another step forward.

Backing away, Johnny pulled Susan with him. Now what?

Closer came Timmins, and Johnny found himself backed into a corner. His hold on Susan was a loose one, although he hoped it looked like he was half-strangling the girl. One way or the other, it didn't matter. Timmins would have him again in a moment. Then the girl had made a game try, he realized hopelessly, but it had come to nothing.

And then Timmins had reached them, wrapping his free arm around the girl's waist and tugging at her. She screamed, "Let me go! Someone let me go. You'll rip me in half—"

Johnny got the idea. It was meant for him. *Let her go...*

Abruptly, he released her, but Timmins continued pulling. She leaped from Johnny's arms like an arrow from a bowstring, plummeting across the room. Timmins was in front of her, facing her, and stumbling backward before her hurtling form—she was screaming and clawing at him all the time, as if she were hysterical—he collided with the far wall and landed in a heap on the floor.

Susan fell on top of him, but she heard Johnny below, and wisely she got out of the way, rolling over and over. She stopped rolling and turned in time to see Johnny cuffing Timmins quite soundly. It wasn't much of a fight. Soon Johnny climbed to his feet, the blaster in his hand. "We're getting out of here," he said.

"Damn you," Timmins cried. "Escape, go ahead, escape! But leave that girl alone."

Johnny found a coil of rope off in a darkened section of the basement. With this he bound Timmins hand and foot, stuffing a handkerchief in the man's mouth for a gag. Without saying anything, he ushered Susan from the room.

And, once they were outside: "My gosh, Susan, he still thinks you were on his side."

"Sure," she smiled. "I couldn't help it if when you let me go I happened to fall all over him. But let's get out of here."

"Yeah," Johnny said. "It's a long way up the mountain."

CHAPTER IV

"THIS IS the ship," Suuki told them proudly.

They stood shivering on the higher slopes above the Chalice City, where now, even in summer, snow and ice clung to the permanent zones of shadow between upthrust crags and pinnacles.

"I still don't see how you got away," John Hastings told his son. "It was a week ago, but no one really told me."

"I guess we didn't feel much like talking," Susan admitted.

"She fooled them, pop. You know that part. Afterwards, well, it was a long way up the mountain, and for a

time it looked like we wouldn't make it, especially when we had to spend hours in hiding because a fleet of 'copters came looking for us." Johnny shook his head. "They have a lot of power down there in the valley. And I don't think we've seen the last of it."

"What do you mean?"

"I mean that Bart Timmins is going to be good and angry. I mean that he's going to yell and holler until he brings the townspeople back up into the mountains, and then there's going to be hell to pay."

Suuki chuckled. "Well, you won't be here then."

"I don't like it, Suuki. I don't like leaving all of you like this, when anything is likely to happen. I'll be gone a long time, we can't tell how long, but if I stayed I might be able to help."

"Anyone can do your work here," Suuki told him. "But what's one fighting man more or less? You'll be doing more important things."

Susan squeezed his hand impulsively. "Yes, Johnny. Think of it—you'll be the first man to leave the Solar System behind you and head out for the stars!"

"Actually," Suuki continued, "it might turn out to be a hopeless quest. Whoever the first humans were who planted the seed for us here in the Solar System, now they could be anywhere. Provided they still exist. It's as sensible to assume that some place in the long passage of time they faded away—or else went so far you'll never be able to find them."

"As it is—" this was the elder John Hastings—"you'll have a mighty hard job on your hands, son. The sky is full of stars—I know it sounds foolish saying it that way—but the sky is full. We don't know which one. We

have no way to find out. It could be any one of them, or the whole thing might turn out to be the greatest wild goose chase a man ever went on; you may find nothing out there but a lot of empty space and a lot of bright stars."

"It is our hope," Suuki went on for him, "that it won't be as bad as all that. If the old race planted the seed for us here, it is logical to assume that they planted the same seed elsewhere. Theory has it that many stars—perhaps one in three—are gifted with planetary families. Very well, a good number of those might have planets suitable for human habitation. It is our hope that on some of them the seed has been planted, as it has been planted in our own Solar System. That way, you may have a trail to follow."

"The first man to leave the Solar System," Susan mused. "I envy you, Johnny. How I wish I could go along—"

SUUKI smiled at her. "Many people do. But no, child. Only one will go. It works in theory, but it may not work in fact at all, and we will try it with one first. If Johnny can accelerate to faster than light speed, if he can find what we seek, if he can come back with his report, then there will be time to think of others going. But not until then."

The elder John Hastings frowned. "Are you trying to say it might be dangerous, Suuki? I wouldn't want Johnny blasting off like this, not if the odds are stacked against him..."

"I don't know. I simply do not know. In theory, it should not be dangerous. But one never knows how the theory fits the fact."

"Granted. But why Johnny? Why must he be the one?"

"Because I want to go, that's why! I'm your son, and you were the finder of the Chalice. It's only right that I go—"

"That's childish," Suuki said. "Nevertheless, there is a good reason, John, although it is not what Johnny says. He has recently returned from the Chalice. He has seen it firsthand within the last few weeks, and that's more than can be said for anyone else here. He must take that knowledge of the Chalice out to the stars with him. No, there is no need for debate here: I would say Johnny is the man for the job."

And so it was agreed, but after a time John Hastings grinned ruefully. "You know, I kind of pictured the first interstellar ship as a huge, sleek thing which would make the modern planetary liners look like grubby midgets. Here it's the other way around."

The ship was a hundred-footer, a twenty-five-year-old vessel, the hull of which was liberally sprinkled with vacuum-patches. It wasn't very imposing and it looked like it might be able to bumble its way along through the void perhaps as far as Mars, provided full thrust were not employed. Instead, it would try to reach the stars....

"I admit it is no beauty," declared Suuki. "But it will run better than the appearance indicates. We couldn't afford a new ship, but we could afford a new engine: she has power, John. She should be able to reach light speed in a day, and then there are arrangements for Johnny to sleep, for, with the passing of light speed, the ship should automatically shift into sub-space and there the acceleration will be tremendous. I don't think Johnny will particularly enjoy his

ride, but the ship should take him where he wants to go."

John Hastings nodded. "Then it is tomorrow. Tomorrow at dawn. Well, son, you'd better get along home and have a good meal and a night's sleep. I have a hunch you'll need both."

JOHNNY stood in the airlock as the first rose-tints of dawn caressed the eastern peaks, promising a fine day. During the night they had crammed the small ship with supplies, with food, with clothing for all types of climate, with records describing man's achievements here in the Solar System, with an arsenal of weapons and ammunition—"just in case", as Suuki had explained.

"Well—" Johnny said, clearing his throat. He felt an unfamiliar thumping in his chest, a wild beating of his heart. He was on the brink of infinity and he knew it.

"Good luck," someone said, and then the whole crowd of them were roaring, "Good luck, good luck...."

Suuki took his hand and pumped it up and down vigorously, and then his mother came and kissed him soundly on the cheek. "Johnny," she said softly, "be careful." Like that, only like that, like she might have said it when he was a kid and when he was going out into the rain and did not want to wear his overshoes. But tears threatened to overflow the corners of her eyes.

His father was last. "You're going out there for the Children, Johnny. They'll be waiting and hoping and—hell, I never was any good at speeches. Find what we're looking for, son. Find it because we need it more than anyone ever needed anything." And then they were shaking hands, and John Hastings thumped his son's back and stepped away.

Still Johnny stood there in the air-lock, unmoving.

"What's the matter?" Suuki demanded. "You do understand the piloting instructions I gave you—"

"It isn't anything like that. I thought Susan would be here to say goodbye, that's all."

Ellen Hastings turned to her husband, laughing. "I believe Johnny has a crush on that girl."

"Maybe. Can't say I blame him. She's brave and she's beautiful. If I were twenty years younger—"

"Oh, you!"

"Seriously, Ellen, if she's not here, she's not. Every minute Johnny waits gives the villagers more time to get organized. If they come busting up here and spot the starship, maybe it won't take off at all."

He hadn't spoken in any whisper, and Johnny heard him. "All right. I thought I'd wait a minute, but I'll go. Tell Susan goodbye for me. Tell her I'll bring back some souvenirs from the stars."

And the lock clanged shut behind him.

Less than five minutes later, the ship soared skyward on a fiery, incandescent pillar. Once it cleared the highest peaks, it vanished in less time than it takes a man to blink his eyes.

FASCINATED, Johnny watched the speed indicator. Acceleration gripped and held him, but it wasn't too painful. It would become intolerable, if and when the ship reached light-speed, but by then a harmless sleeping-gas would fill the cabin and put him into a deep sleep until all acceleration had ceased.

He watched the needle climb. Ten thousand miles per second, then twenty, which was as fast as a human had ever before travelled. Thirty thou-

sand miles per second. Like a bloated white snowball, the moon slipped by off to his left. Forty thousand miles per second....

"Johnny! Johnny, it's beginning to hurt a little—"

Startled, he turned around. Susan Bentley stumbled toward him from the entrance to the pile-chamber. Acceleration tried to hold her back, but she plodded grimly forward and soon she sat down at his feet.

"Hello, Johnny."

"Susan! How on Earth—"

"Not on Earth, Johnny. In space. I'm here."

"I can see that. You crazy kid! This could be dangerous, because if Suuki's wrong we'll never live to see translight speed."

"They said it was dangerous when I went down into Paseo Diablo to rescue you. But I made it and I got you, Johnny. I wanted to come with you this time—I had to come with you."

Johnny shook his head. "Nuts to that. This is no place for a woman, Susan. So I'm going to turn this crate around and set you down at the city before it's too late." Tight-lipped, he began fingering the controls.

Quite suddenly, Susan was upon him, clawing at his hands, pulling him away from the control board. "I want to go, Johnny!"

Momentarily surprised by her onslaught, he was thrown to the floor, and Susan came down with him. She landed on top and he tried to squirm away and back to the controls, for he knew the ship neared light-speed now and once they reached it Suuki's gas would put them to sleep and there would be no turning back. But the girl held him there because she fought with acceleration on her side, pinning him to the floor with her weight.

Since the ship rocketed straight up, acceleration pulled everything to the floor, and with four gravities tugging at them, Susan's hundred and ten pounds became more like half a ton.

"Get off me, you crazy fool! In a minute or two it'll be too late."

"That's what I want. Hah—try and stop me. I said I'm going with you, Johnny."

"Listen—"

"Don't argue with me. I'm going, that's all."

"Okay. Okay, I can't do anything about it now, but after we pass trans-light, you're going to get the spanking of your—"

"Very funny. Look who's talking!" Susan straddled him and her hands were planted firmly on his shoulders. Actually, that was so much theatrics and she probably knew it: she didn't have to wrestle with him, for the dead weight alone was sufficient to hold him down. A sack of grain, under four gravities, would have been equally effective. "Look who's talking," she said again. "Careful I don't do the spanking!"

Rage boiled up in Johnny. "You gawky little pip-squeak—"

"Temper. . . ." Susan was laughing.

"So you think it's funny? You think—"

And then he said no more. Something clicked loudly above them, and a sweetish odor assailed their nostrils. "That must mean we're reaching light-speed," Susan told him cheerfully. She yawned broadly. "Umm-mm. Getting sleepy."

"That's the gas."

"Very sleepy. Johnny? Johnny, I'm afraid."

And that, he knew, was just like a girl. She had hidden aboard ship, fought for her right to stay. Now, all at once, she was afraid. She craved

protection because he was a man and she was a woman. Almost, it was funny. He had tried to picture what it would be like, crossing the trans-light barrier. Alone at the controls, with acceleration racking every fibre of his body, watching the needle climb slowly, slowly. . . . only it didn't turn out that way at all. He lay stretched out on the floor with a girl who temporarily weighed half a ton holding him down, whimpering for his protection.

"Nuts," Johnny said in a very small voice. And then the sweet odor increased. In another moment, he was fast asleep.

SOME TIME later, he got to his feet. Susan had managed to roll over on the floor, and she was stretched out, still sleeping, a yard away. He checked her pulse, found it normal, then staggered to the controls. He was tired, infinitely tired, and that probably confirmed Suuki's theory. All the way down to the atomic level, the cells of his body had been crushed, but—again on the atomic level—they had been recreated instantly, each atom as an individual unit. Hence the Chalice loomed larger than ever before: it healed men and it maintained their health, it made women beautiful and men handsome, but it was also a round-trip ticket to the stars.

The sub-light needle strained meaninglessly at the right side of its dial, but the second speed-gauge was functioning, its needle hovering near the number eighty.

Eighty! In a sense, it was meaningless. Eighty—eighty times faster than nature's laggard light! Or—the figures swam in his head—eighty times 186,000 miles per second. That meant they hurtled through the void at a speed approaching fifteen million

miles a second. In ordinary space, of course, that would have been impossible. Einstein was no dodo, Einstein knew what he was talking about. But his universal field theory was not so universal after all; he had neglected sub-space altogether. No, it wasn't impossible to surpass the speed of light short of attaining infinite mass, you merely switched, quite automatically, from space to sub-space. And there, in a universe which contained neither stars nor space as we know it, the old laws did not apply.

"I'm hungry, Johnny."

"Huh? Oh, you're awake. Me, I guess I'm hungry too, but when you're busy with something else, it takes a woman to remind you of that."

"Well, aren't you going to do something about it?"

Johnny smiled. "The hell I will. It was your idea to tag along, and now that you're here I'd like to get some use out of you."

"So?"

"So scurry on back to the galley and fix something. Come on, scat."

Susan departed.

And soon afterwards, a pleasant odor drifted into the control room. A loud metallic clanging followed it as Susan banged lustily on a pot. "Soup's on," she cried.

Although he knew his way in the ship's cramped interior, Johnny's nose led him to the galley. Susan had done wonders. From the ship's frozen stores she had whipped together a cocktail, soup, steak and all the trimmings. Johnny said nothing. He sat down and was busy eating for the next twenty minutes.

Finally he stood up, patting his stomach gratefully. "Delectable," he said.

"You really liked it? I'm glad."

"You're all right, Susan."

"Hah'. I might have known. Put a good meal inside him and a man will be your friend for life. A while ago, you wanted to spank me."

"You deserved it. But I figure now that we're in this together, we might as well cooperate."

"I might as well cook, you mean. Johnny Hastings, you're nothing but a—a gourmet! And I don't mean that as a compliment. Tell you what, though. I'm willing to bury the hatchet. Shake?" And Susan stuck out her hand.

"You're willing? I like that." He ignored her hand. "Well, okay, but we'll do it my way."

"How's that?"

HE STEPPED inside the out-thrust arm and pushed it down at her side. He kissed her. He'd only meant it to be a friendly little peck, and he thought they'd both get a laugh out of it, but he found himself pulling her close, letting his lips linger on her warm red ones. Then on her cheek, her throat. . . .

"Johnny—"

"I'm sorry," he said. He pulled away, stood off at a distance regarding her. "I shouldn't have done that."

"I didn't say I minded."

"No, that's not it. Listen, kid. We're alone. God knows we're more alone than two people ever were. Maybe the odds against ever getting back are tremendous, I don't know. But we'll have to act like we expect to return, and—well, we might find ourselves doing something we'll regret later."

Susan scowled. "Not only are you a gourmet, you're—you're a Victorian too. You're the most exasperating—"

"Stop it. Don't you see, I liked that kiss. I liked it too much, that's the trouble. I would have liked—"

"Is there any law against it?"

"No. But I—Susan, I think I'm falling in love with you...." His voice trailed off lamely.

"My gosh! Don't say it like you're apologizing. Johnny, Johnny, don't you see, just because we're stuck out here doesn't mean we can't act like an ordinary man and an ordinary woman. There's no reason to cheat ourselves, especially since we may never get back."

"We can't be sure. Maybe it's the situation we're in. Maybe—we hardly know each other."

"So, all right. Will it help if I blush every night? Why don't you use your head? Why do you think I went down to Paseo Diablo like I did? Partly for an ideal, sure. I'll admit that. Only there was more, Johnny. There was you."

"We only saw each other for a few moments before that, but, well, you hear of things like that happening. And there were those days at the Chalice City, before we took this ship up."

"Stop trying to rationalize it or you'll spoil everything. Please."

"Okay. But let me think." Without waiting for an answer, he crossed to the port and looked outside. There was nothing. Utterly and completely nothing. A complete absence of anything. Just the total blackness, that and nothing more. And because everything outside was dark, perception disappeared. It was almost as if someone had painted the port black.

Soon, they fell into a routine. They ate three times during their arbitrary day period, and then they slept—Susan in the small bedroom, Johnny in the control room. He did not try to kiss her again, but at times her nearness made him giddy with desire. Often when she wasn't looking he would follow her every move with his eyes,

and he might have felt better had he known she did the same thing with him.

AND THEN one day, some three weeks after they had started, they heard again the loud clicking sound, and Johnny thought he even heard Suuki's gas hissing in from some unknown vent. "That means we're decelerating," Johnny explained. "We're nearing our first goal, Susan, which happens to be the star Alpha Centauri. We're about to slow down to light speed and less, and deceleration can be just as bad as acceleration." He yawned. "Hey, I'm getting sleepy."

"Will we find anything, Johnny?"

He shrugged, strapping Susan into one of the acceleration hammocks and climbing into the spare himself. "That's a good question. I wish, well, I wish we clear atmosphere over some nice Centaurian planet and find a civilization of the first humans waiting for us. I guess that's too much to ask."

"Umm-mm." Susan was drifting off to sleep.

Perhaps, Johnny thought as he eased off into slumber, they've planted humans all over the galaxy. Whoever *they* are....

Alpha Centauri was a star of about the sun's size, but it belonged to a double-star system, and the companion, Proxima Centauri, turned out to be much smaller and fainter. When Johnny awoke he found they were back in normal space again, found that it was wonderful to see the familiar speckled vault of stars outside. And he gave vent to a primitive war-whoop when he saw that Alpha Centauri had a planet!

Only one, or so it seemed, here across an unthinkable gulf from the Solar System. Almost four-and-a-half light years, and still Centuari was the

closest star. Johnny looked, saw Susan still slept. Chuckling, he decided to land on the planet before she awakened.

He reached it, circled it in a tight, low orbit—retrograde. That way, the planet's rotation would serve as a brake, and did. Presently Johnny was able to take the ship down through a dense white atmosphere which hid the surface features entirely. They came out of the billowing cloud masses abruptly, and Johnny could hardly suppress a moan. Flat gray rock stretched off to the horizon in all directions, broken only occasionally by bleak, jagged peaks which rose almost straight up and were lost in the lowest layer of clouds. Nothing moved, and there was no green which might indicate plant-life. Wearily, Johnny set the ship down with a slight bump, sufficient to awaken Susan.

"Good morning." She stretched languidly.

"Shh! I'm testing."

"What for?"

"Everything. Gravity, density of atmosphere, gasses present. Temperature. Stuff like that. Be finished in a minute."

He was, too. But all he did after that was scratch his head.

"What's the matter."

"I don't understand it. Gravity is within three percent of Earth-normal. Density of atmosphere, the same. There's a little over twenty-two percent oxygen in the air, which is close enough. For the rest, nitrogen, a little krypton and xenon. There's water vapor, too, but very little carbon dioxide. The temperature's fine, seventy degrees Fahrenheit. I don't understand."

"What? You mean the coincidence, this planet being so like Earth?"

"I don't mean that at all."

"Well, I think it's good. It means

we'll find the life we're seeking and—what? You don't meant that? Then what do you mean?"

"I mean that there's no life. Take a look."

She did, and it made her shudder. "I've never seen anything so—so dead-looking."

"Well, we might as well put some life into it, kid. Let's hop outside and stretch our legs, anyway."

THEY did, and found that there was no wind. The air had a strange, flat smell, but it certainly was breathable. After a few moments, it even began to rain, in big, splattering drops.

"Everything for life is here," Johnny said. "Except life."

"What's so strange about that? If you're religious, you say God created the world, and life on it. Well, from that point of view, He's not going to create life just all over. Or, if you're not religious, you say that a happy combination of accidents is necessary to get life started. I once read someplace that the odds against those accidents' all happening together—even if the climate and everything else is right, like this—are tremendous."

Johnny nodded. "I guess you have something there. Whatever the vital spark was, it missed out here. Maybe some day it will come. Maybe—hey! Maybe we're bringing it. There's bacteria all over us, there always is. If some of them stay here after we leave, and if they can survive by eating one another and then multiply too—maybe we started something. And that could be the answer to what happened on Earth, a billion years ago. If some explorer from the stars came down and left some bacteria behind him as he inevitably would, well, there's your early Earth-life. That's how it began."

Susan started to say something, but Johnny interrupted her: "Wait, I'm not finished. Remember I told you I wanted to think about something?"

"Yes. I remember." She looked glum.

"Well, I thought about it and, hell, this is as good a place for it as any. Maybe it will bring some life to this barren slab of a planet."

"For what? What will?"

"A marriage ceremony."

"What! Oh Johnny, Johnny—"

He took her in his arms and held her that way a long time, stroking her hair and kissing her. "I love you, kid. I—I want you to marry me."

"Marry you? How can we do that? You said something about a ceremony. . . ."

"Sure did. It's going to be perfectly legal."

"I love you too, Johnny Hastings, but you're crazy."

"Think so? We won't have any witnesses, but we'll have everything else. You know what this place needs, Susan? It needs a politician—something—I know, a mayor. And there's an electorate of two, you and me. I nominate Johnny Hastings."

Susan was giggling. "I—I think I understand. You're goofy. But all right, I second the motion."

Let's vote. My vote is for Hastings. Good man."

"So is mine." Susan was still giggling.

JOHNNY cleared his throat, spoke in a deep voice. "As mayor of this this—ah, city, I have the legal right to marry people. Do you two want to be married?" And then, in a normal voice: "Sure do."

"Oh, yes. Yes, yes," said Susan.

"In that case—" Johnny's mayor's voice again—"with the power invested in me by the electorate of this city,

with the—oh, hell, Susan, I forget how it goes."

"I never knew."

"Well, then we'll have to cut it short. Do you, Johnny Hastings, take this woman to be your lawful wedded wife, to have and to hold, to love, honor, and protect, through sickness and in health, till death do you part?" He cleared his throat, then said: "I do."

Another pause. "And do you, Susan Bentley, take this man to be your lawful wedded husband, to have and to hold, to love, honor, and obey, through sickness and in health, till death do you part?"

"Well," Susan laughed, "I don't like that obey part."

Johnny kissed her. "Do you?"

"Oh, yes. I do, I do—"

"With the power invested in me and harumph and so forth, I now pronounce you—us—man and wife."

They kissed.

"Johnny?"

"What?"

"I thought it would be silly. It was a little, maybe, but I liked it like that. We had our ceremony and we're really married. No one can take that away from us. It's much better than if we had—"

"You know," Johnny cut her short, "I think this is one hell of a lousy place for a honeymoon. Why don't we get back inside the ship and start off again? Then, after we reach subspace, we'll celebrate."

Susan grinned. "I obey, oh lord and master, just like the mayor said."

"Then come on." He took her hand and together they entered the spaceship. After blast-off, Johnny felt good. He felt wonderful, and, even, very much married. But something kept gnawing at the back of his mind, and he did not like it at all. If Alpha Centauri had been any indication of

what they might find, perhaps they had set out upon a wild goose chase after all. And this planet had all the ingredients in perfect proportion—except life.

They *had* to find something! The Children of the Chalice depended on them. They had to find something and return with it, before it was too late.... And then the sleeping gas came, and their return to sub-space. After that, Johnny stared out for a moment at the utter blackness. They were alone, more alone than any man and woman ever had been before. Well, that was the way a honeymoon should be. Knifing at unthinkable speed through the deep void of sub-space, Johnny took his new wife into his arms....

CHAPTER V

THE DAYS became weeks, and the weeks sped by and were months. Earth was forgotten; almost, it was as if Earth had never been. They streaked in and out of sub-space—seeking, seeking. Time did not matter, for there was something timeless about the black, shoreless ocean of space with its myriad bright, flashing stars, its spinning, whirling, seething nebulae, its dense black clouds of cosmic dust, its occasional nova pulsing into brief glory.

Nowhere was life. They sought it on the swollen planets of blue-white giant stars, sought it again on the worlds of a triple-star system where the sky had a sun of orange and one of green and one of somber red. But the rocky bārrens became legion, the harsh methane atmospheres mocked them, the frozen ice-worlds made them depart, shuddering.

Nowhere was life—until, one day, they found it. A lush green world

swam in the port as they cleared sub-space and, trembling, Johnny set their frail ship down upon it. The jungle was dank and steaming with huge, fern-like trees arching overhead to form an impossible canopy five-hundred feet up in the sultry air. And the air, the air was noisy with the sounds of life. Every faint stirring of wind brought those sounds, sometimes far away and sometimes close.

"Maybe," said Johnny, and "maybe...."

But there was no sentience. A young world and a wild one, the planet would not know intelligent life for another half billion years, if at all. Wearily, they climbed back into their ship and Susan said, "We have each other."

But they had a home, too, back there along the dim, distant startrails, and Johnny told her that. "And our people," he said softly. "They're waiting and hoping. Don't you see, Susan, we can't return empty-handed. Somewhere in the galaxy is what we seek, and we can only keep right on seeking until we find it."

"But there are so many stars! We could spend a lifetime, *ten* lifetimes, looking—and find nothing."

"I know it. I know that, Susan. But look: for a long time we went and we thought there was no life anywhere, except in the Solar System. Today we found life, and tomorrow, who knows?"

"We'll stick to it, of course. I'm sorry I said that, but I guess I'm just depressed—"

"Well, let's consider it logically. Just where have we been?"

"Umm-mm. There's Centauri and Fomalhaut—"

"And Procyon and Deneb and Wolfe's Star—"

"And Antares, Sirius, Capella, Vega

and Achernar. So many, Johnny. So many!"

Johnny smiled wanly. "We're still close to the Solar System, although we're a million times further than any man has ever been. There are more stars without names than those—"

"Don't, Johnny! You make it sound impossible."

"I didn't mean it that way. What I meant was this: first we'll have to look at the known stars, and that still leaves us a lot. Let's take out the star charts."

Susan brought the charts forward and spread them out on a table. "Okay," Johnny said, pointing. "We still have to go here, and here—"

Susan copied the names on a piece of scratch paper. Names that the ancient peoples of Earth had given the stars for one reason or another. Fanciful names and romantic. But hopeless names?

"Then here's the way it is, Johnny. Before we start getting worried, we'll have to visit Arcturus and Tau Ceti—"

"Sure, and Rigel, Altair and Betelgeuse. The sky is full of stars, kid, so stop worrying. There's still Canopus, Spica, Pollux, Regulus—hell, I could go on all day."

"Don't."

"All right, pick some names you like. It's hit or miss, it's got to be that way."

"Well, I like the sound of Regulus."

"Suits me," Johnny said cheerfully, starting to triangulate the position.

"And then Betelgeuse. Hah, I never knew how to pronounce that."

"Don't try. If there are natives, they'll call it something else, anyway. They'd probably call it something that means 'sun' in their own language, just like they'd call their planet something that means 'earth' or 'world' or maybe 'home'—"

"If that isn't just like you.... We haven't found anything more intelligent than a crocodile yet, but you're already giving a language to some unknown intelligence!"

"Regulus it is," said Johnny, "and then Betelgeuse. Incidentally, I always pronounced it like the first half of betelnut and the plural of goose, but I wouldn't bet on it. Well, here we go."

"And after those two, try Canopus."

"You bet," said Johnny. "We've got all the time in the world." He was smiling and his words were flip, but when acceleration gripped them, he didn't feel so cheerful. The sky was full of stars, all right, and he learned that more every day....

REGULUS had not even bothered giving birth to planets. It hung in space, an exile in the bleak marches of infinity, blue and hot and very much alone. They cleared sub-space long enough to find that out, long enough to see the blue orb spewing its energy out to an empty void. It was a month later. A month gone for nothing.

"Five of them," said Susan. "Five months."

Second on their list, Betelgeuse had a great family of planets, but the star itself was red, old, feeble. None of the sixteen planets could support life. All were too far from the primary, all too cold, all had seen their good years perhaps a billion years before the coming of man. Garbed in their cumbersome spacesuits, they poked around some incredibly ancient ruins on the eleventh planet. But, mostly, the ruins had crumbled into dust and what was left told them nothing except that the ancient race had not been human. Everything was built on a scale too small and the

air contained thick traces of ammonia gas, anyway.

Back in their ship, Johnny lit a cigarette. They had no worry about food and their air automatically renewed itself, but such luxury items as cigarettes were fast disappearing and now he nursed this one along until it was hardly more than a glowing ember. "And for now," he said, "that leaves us Canopus."

"The names are all running together, Johnny. It's hopeless—"

He went on as if she hadn't spoken. "Canopus is a very unusual star."

"Yes? Why? They're all the same. Oh, the color is different, but they're all the same because none of them have what we're looking for." Susan began to whimper, softly, but each small sob racked her body.

Johnny placed his hand on her shoulder, but she tensed away from it. He tried to kiss her, found her face averted. She was laughing and crying, holding her head in her hands and not looking at him.

"Out of it, Susan! Snap out of it!"

He hit her, a hard slap which left an angry red imprint on her cheek. And after that her crying became normal and she let her head fall against his chest and used his tunic to wipe away her tears.

"I'm sorry—" he said.

"No. You had to do that. It helped, Johnny. I—I guess I was almost hysterical, but we're so alone..."

"Why don't you get some sleep? We can talk about Canopus in the morning."

"No. Every hour counts. Who can say what's happening to the Children now, after half a year? What did you want to say about Canopus?"

He lit one of the scarce cigarettes and gave it to her, watching as she blew smoke gratefully at the ceiling. "Well, for one thing, it's big. It's the

brightest star in this entire section of the galaxy. It's even bright from Earth, and that's six hundred and fifty light years away. It's class is four, kid, which means it's a white giant. If there are any planets potentially suitable for life, they'd have to be in the neighborhood of a billion miles or more from their sun."

"What a place to get a sunburn!" Susan said, and laughed. The hysteria which had gripped her moments before was gone completely, and that was one thing Johnny had to learn about his wife: her moods knew more variations than a chameleon. And that did not mean, he also learned, that there was anything shallow about her. She simply had many facets, and each one, like the facet of a good gem, had its inner depths.

AND, WEEKS later: "There it is, Susan."

For a long time the girl stared from the port, stared into the inky depths of space outside. A star could be bright—it could be the brightest star in this entire sector of the galaxy, as, indeed, Canopus was—and still, space around it seemed very black and very cold.

Canopus shone brilliantly ahead of them as they surged forward on their regular space-drive. And something, a tiny spark, gleamed off to the left.

"Johnny—?"

"Yes," he cried. "Yes, it's a planet."

And they swept in toward it.

But it wasn't a planet, not really. It had a diameter of one thousand miles. It was all a solid white color—not gleaming, not dull—just white. And the surface was flat, utterly devoid of physical features. Like the black asteroid which held the Chalice!

They came down for a landing,

heard the atmosphere shrieking around them outside. The world was a thousand times bigger than the black asteroid, but still it was not large enough to hold an atmosphere for long—unless, like the Black Asteroid, the whole thing was artificial. . . .

"The atmosphere is perfect," Johnny said, half an hour after they had landed. "Oh, it's not exactly like Earth's, but it's close enough so you couldn't tell the difference just by breathing it."

Susan was busy with some instruments, too, and she told him: "Ditto on the gravity! The slightest fraction stronger than Earth-norm, but not enough so we'd notice it. The temperature's a little hot, ninety degrees Fahrenheit."

"You can thank Canopus for that."

"What's the difference? We can stand it. But you've been using the bio-scanner, Johnny. Is there any—"

"Life? What do you think? This planet looks like a hunk of chalk. No, the air's clean of spores of bacteria or anything else. No life here, Susan."

"Then, then Canopus is no good either? I really thought this time we'd find something." Susan smiled wanly.

"I didn't say it was no good. I said there's no life here. Maybe it doesn't matter. I'll tell you this, kid: the place is artificial."

"Man-made?"

"I dunno. *Someone* made it. It's too round and too flat and there'd have to be a force-field holding in the atmosphere and increasing the pull of gravity, too. Now, if it's artificial, someone made it for a reason. Suppose we go outside and find out why."

"Okay, but just you wait. I'm not going out into that ninety-degree oven wearing this jumper." And Susan was busy exploring in their clothing locker. "Hey," she called after a time,

"there's nothing in here that a girl can wear."

Johnny laughed. "What did you expect? No one invited you along, honey."

"Oh yeah? Then you asked for it." There was a rustling, and then Susan stepped back into the cabin.

Johnny whistled. "You're going *that way?*"

"Sure. It's hot outside, and you're my husband, aren't you? Let's go."

Smiling, Johnny stripped down to his trousers, buckled a blaster around his waist, put fresh clips of ammunition in all his pockets. "You never know," he said. "We're liable to find anything, and this is just in case."

Susan began to giggle.

"What's so funny?"

"Nothing. Oh, nothing, really. It's only that—well, it's exactly like the old stories you read. You're a man, and you're going outside armed to the teeth, complete with space-boots and leatheroid trousers. Me, I'm a woman, and I've seen a dozen magazine covers—well, maybe the women really *would* go like me!"

Laughing, they joined hands and stepped into the airlock.

CHAPTER VI

IT WAS hot, and quite dry. They felt the dryness at once, far worse than the heat. In a matter of hours, Johnny knew, it would parch their skin and crack their lips. Already, his eyes had begun to smart. They maintained a pleasant level of moisture within the ship, synthesizing water from compressed hydrogen and oxygen tanks, but the dry heat which swept over them now would make the Sahara feel like a dank, sultry jungle.

"Well," Susan shrugged doubtfully, "what do we look for? I don't see anything, Johnny."

"No, but if *they* put this artificial planet here, it was for a reason. See? Look at that ground, it's artifical, all right. There's not a fault, a crack—nothing."

"Welcome to Cyberworld!"

"Susan?"

"Hunh? What's Cyberworld?"

"That's what I wanted to ask you. Didn't you say—"

"I didn't say anything. But you said, 'Welcome to Cyberworld.' Though, come to think of it, it didn't sound like your voice. In fact, it didn't sound like any voice. It just made noise kind of inside my head."

"Welcome to Cyberworld. Respond, respond!"

"Johnny, I'm afraid!"

Something was speaking. Not aloud, but within their heads. If Susan hadn't heard it too, Johnny might have thought he was going off his rocker. But the voice which was not a voice at all spoke to both of them. And what had it said—respond...

"Thank you for your welcome," Johnny said aloud, feeling foolish. Susan was trembling despite the heat, and he draped his arm around her bare shoulder. He looked around them, saw nothing but the even, chalky expanse of whiteness. He began to sweat, and it wasn't the heat alone.

"Ask me questions, please." The whisper which came within his head suddenly was almost plaintive. "Ask me questions. Anything."

"Johnny, I heard it again..."

"Shh! All right, who are you?"

"I am no one."

Silence.

"Then *what* are you?"

"Ah, that is better." Sibilant, metallic, eager, the voice spoke within his head. Susan's eyes were open wide and she cocked an ear as if she were listening to something. She heard it too, and that made Johnny feel better.

"That is much better, for I am a machine and hence the answer to your first question had to be a negative one. More particularly, I am a cybernetics machine."

"Where are you?" Johnny still felt foolish.

"I am here. Everywhere. I am the world under your feet. I am this planet."

"All of it?"

"Yes, all of it. I am a memory vault and a limited form of sentience which slumbers until human presence is felt."

"Yeah?" Trust Susan to get cocky when she was afraid! "Then what triggered you off?"

"You did. The human brain emits electro magnetic wave lengths along a certain frequency. They waken me, and I answer questions."

"How do you speak in our language?" Johnny demanded. "None of our people constructed this place."

"I speak no language. I speak all languages. The medium is telepathy, and your brain does the translating. Although I know enough about you to speak your language aloud if I desired. You are of the planet Earth, of the star Sol. You are John Hastings, Jr., and the female is Susan Bentley."

"Susan Hastings!" Susan wailed.

"Bentley-Hastings," the machine compromised. "It does not matter. Ask me questions."

Johnny chuckled softly. After the novelty wore off, it began to grow amusing. The machine had a one-track mind, provided machines had minds. Ask it questions...

"Why do you always say that?" Johnny wanted to know.

"Simple. I was constructed to answer questions. My memory vaults fill the interior of this globe completely, and, literally, I can answer anything. Try me."

"How old are you?"

"Umm-mm, five millions of your years."

"Five million!"

"Certainly. I'm no youngster." The unheard metallic voice which yet gave the strong suggestion of sibilancy now sounded casual, almost friendly.

IT MADE Susan blush and attempt to cover herself self-consciously with her arms. "Do you think he—he can see me? I mean, the way I am...."

Johnny smiled, enjoying himself. "I didn't tell you to come out that way. But, seriously, you can forget about it. Who said anything about a he? It's an *it*."

"Well, I don't like it," Susan persisted. "Ask whatever you want, Johnny, but then let's get out of here."

"Suits me. Who put you here—five million years ago?"

The reply came at once, and Johnny somehow could picture the impossibly vast memory vaults beneath his feet shuffling and reshuffling through a maze of indexed information. "The first humans, naturally. It was after they had developed the powers of regeneration and after they had broken out into deep space. They stopped here first and constructed a planet. This planet. Me. This planet which circles Canopus once in every—"

"Never mind. Why did they build you?"

"Elementary. I am here precisely because such as you might come. However, you are first. The very first in five million years. An age ago, the first humans journeyed out into space with a plan. Perhaps it was a noble plan, but that is not my province. They were the Lords of Creation and they knew it. Their plan was a dream—to spread their seed across the galaxy. This they did, and returned.

Naturally, suitable planets were limited. Your Earth is one, Mars and Venus in your Solar System, others. All told, there are three hundred and seventy-five. Would you like to see some of them?"

"Would we!" Johnny cried. "You bet we would."

There was a silence and then Johnny—saw. He didn't know how, but he saw. The picture came in his brain only, for when he shut his eyes he could see it quite clearly. Three-dimensional, colored, vibrantly alive.

The metallic voice droned. "This is the planet Glehna of the star Spurl. You will observe that—"

But he paid the voice no attention. It wasn't necessary. The sun was orange, a deep, mellow orange. The fields were lush, but purple, not green. Men and women worked in them, big, strong men, comely women, naked but for loin cloths.

"They are primitive on Glehna," said the voice. "Their machine age lies some three thousand years ahead of them, but they are a happy people. Next, you see Lulalim, of the star Li. Here the people are not so happy."

A SOMBER landscape, thrusting naked crags up at a heavy, black-laden sky. A blue sun, but far away, showing briefly through a rent in the clouds. It was cold. Johnny could almost feel the cold, and because he could see the picture in his head and not his eyes, he saw also that Susan was shivering. Then she saw it too....

"The environment is not ideal for man," said the machine. "Man can barely scratch out an existence, and so it is entirely possible that on Lulalim men shall always be barbaric. You will notice, by the name of their planet, the softness of their language.

A reaction to the harsh environment—"

The picture wavered, flickered as the voice trailed off. Another took its place. The depths of space—a crude, rocket-driven spaceship in the background, men spewing from its port, helmeted, space-suited, rockets strapped to their shoulders. With the reckless grace of practiced mayhem, they boarded another ship. Of their number, many died, but others there were who reached the second ship, blasted their way within, fought and died for some nameless cause. Johnny thought he saw a skull and crossbones emblazoned on one man's arm before the arm and the man disappeared in a flare of radioactivity.

"These are the people of Shilot," the machine purred. "A crude form of interplanetary travel is theirs, but they fight senselessly among themselves. They will never reach the stars."

Again the picture wavered, disappeared.

And there were others. After a while, Johnny lost track of them. The civilizations pictured varied; some were hardly civilizations at all, others had developed to a remarkably high degree. But not one of them had yet reached up for the stars.

"All right," Johnny snapped. He could have watched all day, looking at the great pageant of a humanity which was spread out thinly across the incredible reaches of the galaxy. But the machine had no intention of hurrying, apparently, and Johnny couldn't merely stand there watching. "All right. But it seems peculiar. Are we of Earth the most highly advanced of all the human cultures?"

"No one told you that, John Hastings, Jr. There have been others, according to my records, although none of them have ever come here.

Naturally, when they developed star-travel they also found their Chalice. One planted, in each case, in some remote part of the particular star system. Observe—"

The world he saw now was dark and dead, but it glowed. There was something unwholesome about that glow, the way it pulsed from horizon to horizon, flickering brightly and obscuring the red sun. There were cities, or what had been cities—crumbled and fallen into ruin. Not very long ago, it seemed. Nowhere was life.

"They found the Chalice," the voice droned. "And because they could not all use it, war resulted. It was a deadly war, fought with radioactive weapons, and, as you can see, the planet is a radioactive corpse, festering forever in the void."

"Again, the same thing happened over and over." As the voice continued, the picture faded, another one taking its place almost at once. "This is Karnok, of the sun Karnokkay. Here they are a generation behind, but the results will be identical in time."

The city thrummed with activity, a bustling, busy metropolis the size of New York. It had been a great port once, for Johnny could see the massive quays protruding out into an inlet of some nameless ocean. But the waters of that ocean glowed dully, dangerously. Radioactivity once more? Johnny couldn't tell, but not one ship plied those waters.

Something streaked in over the city from the south, a hurtling thing all silver and glass in the bright sunlight. It hovered over the city, and something else, smaller, winged down from its silvery belly. A few moments later a fiery mushroom erupted from the streets of the city, and when, after what must have been a long time, it

was carried away by the winds, the city was dead....

"They fight for their Chalice. One nation has it, the other wants it. The war will engulf both in destruction."

"That couldn't happen on Earth," Susan said. But it sounded more like a question. "After all, we don't have nations. We have one world state, and it's a democratic one."

"Sure, but there are pressure groups. You saw them for yourself. And what about the way the Children are treated? Civil War could mean the same thing, but—"

Said the voice: "On this next planet, you will see—"

"That's enough! I have another question. Who are those that created you?"

"I have said, the first humans."

"Yes, I know that. But who, and where?"

Silence. Then: "That information is classified. One moment, please."

Johnny and Susan looked at each other hopelessly.

"CLASSIFIED? What does he mean by classified?"

Johnny grinned wearily. "Not he, it. But search me, kid. I don't know what it means...."

Suddenly, something groaned beneath their feet. Johnny blinked, and when he looked again, a portal had opened in the flat white rock of the planet. One moment there was nothing—the next, a circular pit awaited them.

"Enter," said the machine's voice. And, when they failed to move: "You have nothing to fear, provided your intentions toward the first humans are friendly. I have said enter. Enter."

Johnny shrugged. "What do you think, kid?"

"Don't look at me. But we're not

getting anywhere by staying here, that's for sure."

"Well, okay." And Johnny stalked toward the pit.

As it turned out, a flight of stairs awaited them, and it reminded Johnny of the nine steps leading to the Black Chalice. Naturally, he thought, the same builders....

The stairs led around and down, descending in a circular fashion for about a hundred feet. And at the bottom, they found themselves in a small, square room with a soft, almost spongy floor.

"Lie down."

"Huh?"

"I said, lie down. We will conduct certain psychological tests to determine the frame of reference in which you hold the first humans. If it is a friendly frame, you go from here with the information you seek. If it is hostile, you do not leave here at all. The vault will simply close in upon you. The third alternative is this: you may withdraw now and depart without receiving any information."

Susan frowned. "If we flunk whatever test he has up his sleeve, we're buried alive. All right, *it*. *Its* sleeve! But Johnny, what kind of test...."

"That beats heck out of me. How should I know? But look, we've got nothing against these first humans, have we? We came to find them in the first place?"

"Yes, that's true."

"Well, don't get optimistic on me. It's not entirely true. Subconsciously, we're probably both bitter. The first humans planted the Chalice in our Solar System, so, as a result, we're hated, feared, fought with—"

"You mean maybe *it* will interpret that as hostile?"

Johnny shrugged. "A possibility. All I'm trying to say is this: we can't

be sure. This machine of a planet will be completely objective, but what it calls hostility might be something we wouldn't think of that way at all. Think it's worth a try?"

"Johnny, you sound almost flip. But—"

"I know. Our lives depend on it. I don't know what the answer is, but it's a cinch we won't find what we're looking for unless the machine tells us. So, I think we ought to give it a whirl."

For answer, Susan turned and faced him, placing her arms around his neck. "I thought so all along, but I wanted to hear you say it."

"Well, I said it."

"Kiss me, stupid. Umm-mm...."

And then they had stretched out, side by side, on the spongy substance, while the voice repeated again and again, "Lie down, lie down—ahh, that is good!"

A pause. Then: "You are asleep." Simply stated, with no fanfare, no preambles. The ultimate in hypnotism, for Johnny felt one brief instant of vertigo, reached out to clutch Susan's hand, but didn't make it. He was sound asleep less than a second after the voice commanded it.

HE AWOKE with a headache. Dimly, he half-remembered dreaming, and while he could not remember what he dreamed, the thought of it somehow left him strangely frightened. "Susan?" he whispered. "You all right?" He smiled. There are certain places, certain happenings, which make you want to whisper. This crypt with its dreaming, hypnotic sleep was such a place.

"Yeah, I guess so. I have a headache."

"Me too. Well, I guess we passed the test. At least, I see no indications that we're locked in here."

Then, came the metallic voice: "You are quite right. While your brains display a marked amount of hostility and ambivalence toward the Chalice, they regard the first humans only in reverence. As a result, the classified information is yours for the asking. Ask me questions."

"Where are the first humans?" Johnny demanded.

"They exist in a star-system which has not been named by you."

"Oh. In that case, it's probably hundreds of light years from here. A long trip, but we can make it."

"You do not understand. You have not named the particular star-system because it is remote. Truly remote. It is in the galactic satellite which, in your language, is referred to as the Greater Magellanic Cloud. It is therefore—"

"What!" Johnny gasped. "Magellanic Cloud—that's so far from here that we couldn't reach it in a dozen lifetimes, even with our sub-space drive."

"To be precise, the distance is 26,000 parsecs, or 86,000 light years. Although it is actually within the outer fringes of the Milky Way Galaxy, the Greater Magellanic Cloud is, for all intents and purposes, an exterior galaxy."

Susan pouted. "That's great. Oh, that's just wonderful. Now that we know where the first humans are, we can't do a thing about it."

"Ask me questions," the machine purred in their minds.

"Can we get there?" said Johnny. "Of course."

"That's ridiculous." Perhaps, he thought, the machine had misinterpreted the question. "How can we get there? Not with our sub-space drive?"

"That is correct. Not with your subspace - subspace - subspacesub - space...."

Quite suddenly, the machine voice which spoke and yet did not speak sounded like a broken record. The same syllables, over and over again.

"It broke down!" Susan wailed.

"...spacesubspace..."

Johnny couldn't help smiling, in spite of the situation. "Well, after all these millions of years, I guess it kind of needs oil. But that's a hell of a note, when we're getting so close to the answer—"

"...subspacesubspace...ah! I oil myself, you see, but sometimes it takes time until the various units can attain harmony once more. Now, what were you asking?"

Johnny wiped the sweat off his forehead with a trembling hand. "How can we get to the Greater Magellanic Cloud?"

"I can send you. That, also, is why I am here. The first humans planned it this way, for beyond sub-space there is something which, for want of a better term, I call folded space."

"I don't get it," Susan protested.

"Elementary. In sub-space, you can travel far faster than light, but not fast enough when intergalactic distances must be coped with. In folded space, that is precisely what happens—space is folded. You would not understand the science behind it, but it is precisely as if space were a sheet of paper and you could somehow fold it, corner to corner. Thus, to get from one corner to the other it would not be necessary to travel across the length of paper. Instead, through folding the sheet the corners are made to coincide. Travel is instantaneous. And such is folded space."

Johnny chuckled grimly. "Okay, I won't argue with you. When can you send us?"

There was a pause. Then: "Now, if you wish."

"We sure do."

"But much has happened on Tawroc since I was created...."

"Tawroc?"

"Tawroc, the home of the first humans. I think you will be sorely disappointed, for, although they created me—"

"Well, just let us decide that."

"Good enough. You will, naturally, need a command of the language of Tawroc. So—"

JOHNNY was aware of an unfamiliar rustling within his head, and the suggestion of pain with it. Looking at Susan, he saw her face was strained, twisted, distorted. Then, did the pain affect her more strongly? He reached out to comfort her, but abruptly, the strangeness within his head subsided, and his wife relaxed visibly.

"It is done," the machine told them. "You will speak Tawroc when you have to. But, because I do not believe you will find on Tawroc what you seek, I will await your return here. Now, are you prepared to leave?"

"Yes," said Johnny.

"No!" This was Susan, indignantly. "If you think I'm going any place where there are people, dressed the way I am—"

"Undressed, you mean," Johnny laughed.

Together, they climbed the stairs, returned to their ship, got clothing for Susan and more arms for both of them. In the crypt once more, the machine's voice was impatient.

"Vain," it mused. "Humans are so vain. But I perceive you are ready. Goodbye, good luck, but I think you will be a lot wiser when we meet again."

Johnny looked around uneasily. "I don't understand," he admitted. "What can that mean, we'll be disappointed with Tawroc? The birthplace of hu-

manity, kid—can you imagine what that means? It was there, millions of years ago that the seed was spawned. Now it's spread out over the length of the galaxy. But Tawroc, Tawroc should be as close to heaven as a man can ever get and still live."

"Eighty six thousand light years," was all that Susan said. "Can it be done...?"

Johnny did not know, nor did he have a chance to ponder it. Something seemed to grip him and twist, and he felt, impossibly, that he was being turned inside out! It failed to last long. He knew, dimly, that it could not. Even the Children would not long survive the exquisite pain which lanced through every atom of his being. He heard Susan screaming, saw her as through a dense fog, far, far away. He tried to reach her, but she floated away on that unreal sea of fog, the wraiths of it swirling and billowing between them. He called her name, heard it rebound at him from all sides, "*Susan, Susan, Susan...*"

The fog carressed him, brought with it a brief awareness of utter cold. Tumbling headlong into a pit of that cold, Johnny remembered nothing more....

CHAPTER VII

THEY WERE on a beach, a wide, sandy beach which sloped down gradually until it met the sea. The water had a strangely reddish cast and Johnny thought first of plankton until he looked up and saw the sky, too, was a glowing crimson. Clouds obscured the sun, but he knew, if he could see it, the day-star would be somber red. A hundred yards down the slope, the waves shattered themselves to red-spray, billowing and roaring and tumbling back upon the waves

behind them. Fury lashed those waters and it might have been a hurricane. But the air was quiet. Then the sun was close, and over on the night side of the planet, one or more big satellites must have whipped the nameless ocean to a frenzy.

"Where are we?" Susan asked, propping herself up on one elbow and brushing the sand from her hair. And, when Johnny laughed: "I know it's a stereotyped question, but where *are* we?"

"Tawroc, I guess. Wherever Tawroc is. That machine wasn't kidding."

"That's fine," Susan said. "That's just fine. He—*it*—only neglected to tell us one thing."

"What's that?"

"How the hell are we going to get back from here?"

It was a good question. Canopus and their ship lay across the length of the galaxy from them, and Canopus was a thousand times brighter than Sol. Even Canopus, at this distance, would be nothing but a tiny mote, lost in the deep, far away clouds which formed the Milky Way.

"Later," Johnny said. "Ask me that later. Right now—hold on, what's that?"

Someone was coming up the beach toward them. At this distance he wasn't much more than a tiny dot, but soon he came closer and they could see it was a man. He hailed a greeting at them and it was in some strange, alien tongue. "*Kortu!*" he cried, and again: "*Kortu!*"

"That means hello," Johnny found himself saying, and then, startled, he raised a hand to his mouth. He'd said: "*Chora ben kila tok.*" They were nonsense syllables, they could have utterly no meaning for him or for Susan. Yet, saying them, he understood.

"My gosh," said Susan. She didn't

say it in English, but Johnny comprehended.

"I think I understand," he mused, again in the perfectly understandable alien tongue. "That machine wasn't fooling, he gave us the language of Tawroc, but it remained dormant in our brains until a word in the language triggered it off. Now we know it, and speak it."

They couldn't doubt this one final improbability. The machine, indeed, had seemed capable of anything, and one minor miracle more or less wouldn't matter.

By now, the man who had hailed them was approaching, and Johnny watched him trudging along through the sand. He was middle-aged, with a long, careless shock of iron-gray hair, an intelligent face and a short, stocky figure.

"Kortu!" Johnny cried. "Greetings!"

"Greetings yourself. What are you two doing down here on the beach?"

"We just arrived," said Johnny.

"Fine weather we've been having, if you go in for admiring the weather. Personally, I don't. Some primitives still do, and I thought the way you were dressed, and all—"

THE MAN wore a sort of coverall, but if there were any seams, Johnny failed to see them. The outfit was of some metallic material, and it seemed to flow fluidly with every motion the man made.

"We're strangers here," Johnny told him. He was beginning to enjoy himself. He could picture the man's face when he was told that the two before him had come from the stars. A culture-dream realized, after how many millions of years?

"Strangers? I don't understand." Then, suspicion crossed the man's

face. He came close to Johnny, stood on tiptoe, peered into his eyes. He relaxed. "Oh, you're blue eyes, all right. Is the woman yours?"

"Yes, my wife. We have come—"

"Haven't seen any brown eyes in days. Guess we chased them off this continent. If we keep winning the way we are, the sides will have to be changed, of course. Too bad, for I really learned to hate brown eyes."

"We have something to tell you. We—we're not of Tawroc."

"Hah-hah. Not of Tawroc. That's good. Hah-hah."

"I'm not joking."

"Well, then explain yourself. How can that be?"

"We are from the stars. Wait—don't laugh. You see the Milky Way Galaxy in the sky at night, don't you?"

"See it? It practically covers the entire sky! Of course I see it. So what?"

"So that's where we come from. A planet called Earth, circling a star called Sol. A generation ago, we found the Chalice you left, and—"

"That's interesting." The man clucked his tongue once or twice, nodded. "That's interesting. You plan to stay long? Look me up some time in Chandros City if you do. Meanwhile, guess I have to go on down the beach and look for brown eyes. Never know where they're liable to pop up, the rats."

Johnny felt something was wrong. He couldn't tell what, but it was something. Perhaps the man hadn't understood.

"My name is John Hastings," he said. "This is my wife, Susan. We're not native to Tawroc. We come from the Milky Way Galaxy, thanks to the Chalice your people planted in our Solar System, an eon ago."

The man yawned, stretched, watched the tides come booming in. "You already told me that. Have a nice trip?"

"Man, don't you realize we've come across eighty six thousand light years to see you? You planted our seed on Earth, and we spawned. We found your Chalice—"

"You already told me that, too. And don't you think I know my history? Too bad you didn't arrive a bit earlier, you could have taken part in the brown-eyes blue-eyes war. Almost over, I think. Say, wait a minute! I thought there was something fishy here!"

Wordless now, the man peered intently at Susan's face. "Ah-hah!" he cried triumphantly. "Brown eyes, I might have known." Before Johnny could stop him, he had reached into a pocket of his coverall—the pocket seemed invisible, but it was there, for when he thrust his hand laterally across his chest, it disappeared within the garment. He came up with a small, slender tube, pointed it at Susan. Something glowed briefly and she did an abrupt flip-flop in mid-air, then fell on her face in the sand.

"**SUSAN!**" Johnny cried. He kneeled by her still form, turned her over tenderly, felt for the heartbeat. It was there—but faint. He stood up, rage contorting his features. "Damn you—"

The man clucked softly, returned the weapon to its invisible sheath. "Are you sure *your* eyes are blue?" he demanded.

Johnny hit him, felt his knuckles crunch on the man's thin jaw, watched him fall and land on his back.

Wiping blood from his lips, he looked up at Johnny. He seemed very confused. "Why did you do that?" He shook his head sadly. "Why?"

"Damn you—"

"Oh, don't worry about your wife." The man didn't wipe his mouth any longer, for the bleeding had stopped. "She'll be up and around any minute now. Of course, she'll have to go to Casualty Island for the duration. But I have a suspicion this war won't last much longer, anyway."

Susan stirred. Her eyelids fluttered, and, in a moment, she got to her feet groggily. "What hap—"

"Don't talk!" the man protested. "It's against regulations. I got you fair and square, there's no denying that. There'll be a boat leaving for Casualty Island this afternoon and, naturally, you'll be on it."

Susan frowned. "What's he talking about?"

"I don't know. I think he's crazy. He must be crazy."

"Now, listen, young woman. You've got to follow the war-ethics. There wouldn't be much sense to warfare if you didn't. Although, I must admit some people are growing bored with it, anyway. Say, maybe you'll have some suggestions. What do you do on your world for diversion?"

"Well," Susan began, "we—"

"Skip it," Johnny told her. "He's a first-class nut. Uh—Mr.—"

"Nabish, name's Nabish."

"Nabish, where's the nearest city?"

"Right back of the beach that way, two or three miles. Depends on whether you mean the metropolitan area or the city itself. I always say—"

"Thanks," Johnny told him, leading Susan away. Nabish clucked his tongue in sad confusion as they departed.

THE CITY was quite beautiful. They saw it first from a rocky highland overlooking both it and the beach. It spread out below them, circular, the avenues radiating from a

central plaza like spokes from the hub of a wheel. Flat-roofed and square, all the buildings were low, graceful structures.

"Want to go down there now?" Susan asked.

Johnny nodded. He couldn't get the man named Nabish out of his thoughts. He'd seemed intelligent, even perfectly rational, if you could disregard that business about a brown-eyes—blue eyes war. He even seemed to understand when they said they'd come from a far world, from the Milky Way Galaxy, which certainly should be the predominant feature of the night sky here. But—if he understood—he didn't care. It failed to stir him. And Johnny, for his part, had expected the people of Tawroc to receive Susan and himself as a father might receive his long-lost son. Racially, that was the relationship, but Nabish's attitude, assuming the man were sane, could foster only confusion.

A broad avenue swept around the outer fringes of the city's radiating streets. This was the rim of the wheel, Johnny thought idly. He'd have been interested if they hadn't met Nabish first but, with Nabish gnawing at the back of his mind, architectural beauty left him cold.

The avenue was crowded with vehicles, but so fast did they streak by that Johnny could hardly see their design. Vaguely, they were tear-drop-shaped, hugging the ground and zooming over it as if they somehow did away with friction. There were pedestrians, too, waiting to cross on either side of the avenue. Every now and then, one would dart out into the street and hurtle, dodging and weaving, to the other side. There was no screeching of breaks as the vehicles sped on by, and not one of the pedestrians had an easy time of it.

"People can get killed that way," Susan said, and laughed nervously.

"Not Chalice people," Johnny reminded her. "Oh, they can be maimed, but they'll heal."

"Still, you'd think they'd develop some kind of traffic control. The accident rate must be awful high...."

Johnny whirled around then. Someone was screaming. He caught a brief glimpse of a woman darting out across the street, saw one of the zooming vehicles bear down on her. She tried to avoid it, but the vehicle bore on, swerving neither to left nor to right. There was a crunching sound, and more screaming as the woman was borne along for a score of yards under the vehicle. A moment later, her broken, bloody form remained on the highway, while more cars streaked past.

"How awful!" And Susan averted her face.

A BELL clanged somewhere, and a portal opened in one of the square buildings. Out came four men, carrying a stretcher. They waited several seconds, then ran out across the road with it, scooping the woman up and carrying her back to the building. In a moment, the portal shut.

Two men stood a few feet off at Johnny's left, and he heard them talking. "Shame about Lidun," one said.

"Yes. There was to be a party at her house tonight. But it will be two days before she's herself again."

"Umm-mm. Yes. She got mashed pretty badly, so I guess they'll have to give her new features. Well, she never was very pretty."

"Her husband's going to be furious. Hah, poor Skandar. That's the third time this month his wife has met with an accident. I always said Lidun wasn't the most graceful woman in the world."

"What you forget is that Skandar is brown-eyes, and a casualty, too. He won't know anything about this till after the war is over. Lidun's suing for divorce anyway—can't blame her, not while this war is being fought."

Johnny cleared his throat. "Hello," he said, smiling.

"Eh? Hi, neighbor. Don't think I know you."

"My name's Hastings."

"An odd name. You from Syloph or one of the mountain cities?"

"No. Some place else. Does this sort of thing happen all the time?"

"What sort of thing?" The two men looked at each other queerly.

"This accident. I mean, I should think you'd have a way of regulating traffic—"

"Where *are* you from?"

"A long way off. What I mean is—"

"He must be one of those mountain yokels," the second man said. "Only thing they have to worry about there is the animals. But then, that can be pretty rough. Yes, friend, this sort of thing happens all the time. Why shouldn't it?"

"Why shouldn't it? Well. . . ."

"It's perfectly harmless. Lidun will be dodging cars again in two days. Unless they call her number on the lottery and decide she's to be un-Chaliced."

"Don't tell me that can be done?" Johnny demanded.

"Why, naturally. Where did you say you were from?"

"I didn't."

"Well, wherever it is, you certainly must know about the lottery. It's just to keep life interesting, friend, and the Almighty knows we need something to keep life interesting, eh? One each month out of every hundred thousand people is un-Chaliced. Poor things, a lot of them commit suicide. But then,

you can't blame them. Funny thing about the rest of them, they go off to live in the mountains some place—"

"No," his companion corrected him, "in the desert. They go off into the desert."

"The mountains!"

"Desert."

"Mountains."

"Des—"

The first man took one of the tubes from his coverall, pointed it at his companion, who glowed briefly, then fell. A bell clanged again, and the stretcher-bearers shuffled out of their building, retrieved the body, returned inside with it.

"As I was saying," the first man went on, "they hide off in the mountains some place, and—I'll be un-Chaliced! He was right. Jor was right. It's the desert, I remember reading something about that. Well, I'll have to apologize to Jor when he's up and about again. Anyway, what were we talking about?"

"Forget it," Johnny told him. "Listen, who's your civic leader here? I'd like to see him."

"Civic leader? What's that?"

"An official. A mayor, or president or city-planner. Something—"

"There's no such man."

"Your government, then. Where's your government building?"

"Government? Oh, a body that governs. Why, there's no such thing. Be an awful lot of waste, wouldn't it? What do we need a government for?"

"Isn't there anyone with authority?"

"Of course. Each man's his own authority. The Almighty knows life is boring enough, without someone having to restrict your behavior. Say, how come you're so naive?"

"Forget it," Johnny said again. "How about a scientist? I'd like to see a scientist."

"Well, every man to his own opinion, I always said. But what do you want to see one of those idiotic hobbyists for?"

"Hobbyist? Don't you have any professional scientists?"

"What do we need them for? We've got everything we want. But, as I've said, there are some who dabble in science. Hobbyists. Want to see one, eh? Well, umm-mm, let's see. Yes, Condan would be your man. Condan." Here the man paused, took what looked like a sheet of paper from his invisible pocket, wrote on it. "This is Condan's address, my friend. What did you say your name was?"

"Hastings."

"Right, Hastings. See you some time, but then, if you meet with an accident between now and then, I might not recognize you. Keep interested."

CONDAN'S house was like all the rest, and Johnny paused before running his hand in front of the electric eye on the door-frame.

"I don't like this place," Susan said, shaking her head.

"I don't understand it. Well, maybe this Condan—" And he heard chimings within the place when he ran his hand across the electric eye.

In a few moments, a woman came to the door, tall, angular, unpretty. "Yes?"

"We'd like to see Condan?"

"What for?"

"Hunh?"

"I work here, so I have to see the horrible old man, but why anyone else would want to see him I cannot understand."

"Still, we want to see him."

"Hmph! I'll tell him he has callers."

And the woman plodded back through a foyer, muttering to herself.

Condan followed her when she returned to them a few moments later. Condan was short, bent, quite thoroughly bald, with beady little eyes that darted furtively first from Johnny to Susan and then back again.

"Yes?" he demanded, his voice squeaking effortlessly over two octaves while it uttered that single word.

"You're a scientist," Johnny said. "We'd like to speak with you about—"

"Very well, young man. Whatever it is, very well. But first allow me to apologize for my hobby. Yes, I am a scientist, but not out of direct choice. I tried arson as a hobby first, but I'm too clumsy, and I burned myself up pretty badly after three tries. Assassination, next, but it's a thankless labor, for no matter how well you do your job, your victim is up and around within a few days. Next I tried...but I'm boring you, and we can't have that.

"In short, I tried everything. Science alone remained, and so I dabbled. Actually, it does have its rewards, for I have heard of someone who met with an accident while using acid, and—"

"I see," Johnny told him wearily. "What science do you specialize in?"

"Why, none in particular. All of them. I'm the word's foremost scientist, I'm sorry to say, but then, remember it wasn't out of direct choice. I just had nothing to do with my spare time, you see."

"I still don't like this place," Susan whispered.

But Johnny said: "We don't come from Tawroc."

"Umm-mm. That's nice. Perhaps I can write a paper. But sadly, few will read it. What precisely do you mean, you don't come from Tawroc?" Mild curiosity showed on Condan's features. He scratched his bald head.

"Well, do you know any legends of your ancestors, ages ago?"

"Oh, yes," Condan answered brightly. "I know of many such legends. There is, for example, one which tells of our people before they had the Chalice. It must have been terrible, because people are bored unless there are accidents, and without the Chalice accidents too often would prove fatal."

"I don't mean quite that far back," Johnny persisted. Part of his mind by now realized that their quest was a hopeless one here on Tawroc. But, doggedly, he stuck with it. "I mean soon after your people developed the Chalice."

"Oh, yes! That legend has always been one of my favorites. We went out to the stars—some say even across the great gulf of space to the Milky Way Galaxy. And there we set the seed for mankind. It is very interesting, although, if you dwell upon it too long, it becomes boring, like everything else."

"We're from the Milky Way Galaxy," Johnny told him. "We are the fruit of that seed. And we've come a long way."

"I believe you. I do. I really do. And let me tell you that's very nice, young man. Yes, I certainly must write a paper, although I doubt if I have the funds to publish it. Well, perhaps next year."

"Darn it!" Susan finally had lost her temper, and now she raged at the little scientist, who did not quite know what to make of the situation. "Darn it! You might at least congratulate us. You should all feel like a—like a God, almost. But you just stand there and say that's nice! Darn it—"

"She must be bored, poor thing," Condan decided. "Did you ever think of taking her away to the mountains for a few months? Some of the an-

imals are quite ferocious, and it's usually a stimulating vacation. I would—my word, it's three o'clock."

INSIDE, something had clicked loudly, three times.

"I'm the lottery man this month, you know. Three o'clock. That makes you two the winners. You'll be un-Chaliced, of course. May I be the first to offer my sympathies?"

"Keep your hands off me!" Susan cried. Condan had been shaking his head sadly, stroking her shoulder.

Johnny spoke, jabbing his finger against the scientist's frail chest with every word. "We're not going to be un-anythinged. We're getting out of here."

"Where will we go? I appreciate your feelings, young man. But it is now known all over the planet that two people answering to your descriptions have been selected for the lottery this month. If you resist, you'll be taken in time. But, naturally, resistance could be amusing. Have fun."

Johnny's head was swimming. He knew now that he'd expected a veritable godhood in the men of Tawroc. Instead, he'd found—this. But still, he wasn't ready to give up. He said, "Listen. We came here for help. We have a Chalice which you planted in our Solar System, but it breeds trouble. Few can use it, the rest are jealous. If you can let us know how to build another one, many other ones, our trouble will end, and—"

"I'm not so sure, Johnny," Susan told him. "Maybe then our troubles would just begin."

Shrugging, Johnny ignored her. "Can you do that? Can you teach us to construct another Chalice?"

"Naturally, young man." Condan nodded. "But it won't do you any good, you realize."

"Why not?"

"You're for the lottery, remember. You'll be un-Chaliced. Then, if I remember my history correctly, you won't be able to travel between the stars."

"What do you mean, history? Don't you have space travel?"

"Whatever for? It's boring enough on the surface of Tawroc, but can you imagine how bad it would be with a lot of nothing all around you. There hasn't been a spaceship built here in a hundred thousand years. Well—ah, that would be the Lottery Committee."

The door-chimes had sounded, spilling their musical notes up and down the range of two scales. Johnny heard the angular housekeeper opening the door, saw four men enter.

"Where are they?" said one.

"Here." Condan pointed.

"Well, are you two ready?"

Susan smiled wanly. "Johnny, honey? Oh, Johnny, do you mind if I cuss?"

"N-no."

She turned to the Lottery Committee. "Go to hell."

And then she was giggling. The let-down had been tremendous—for now Johnny knew that Tawroc and its first humans could offer them no help. They'd come across the length of a galaxy and beyond for nothing, and now they must go back to their people and say they had lost. But for Susan it was worse. Her high-strung nature had plunged up and down like a wayward rocket, and her rage fringed on hysteria.

"Kill them, Johnny! I don't care how, I don't care—but kill them...." And then her head was against his shoulder and she was sobbing. "Kill them, kill them.... Johnny, oo-ooo...."

Johnny wanted to comfort her, knew she'd need a lot of it. But there

wasn't time. Condan knew what he was talking about, and if they were un-Chaliced, there'd be no returning, ever....

On the other hand—and suddenly Johnny's heart bobbed up into his throat and remained there—the machine had never told them how they could leave Tawroc!

Had, in fact, never told them they could leave at all.

The machine was only that—a machine. A thinking machine, perhaps, but completely objective, impartial. This world of Tawroc was different. Trouble was, *it didn't care*. Its people cared about nothing. The Chalice had made their ancestors too perfect, and the result was ennui. The whole world of Tawroc, almost, had a personality, if a negative one. It didn't care. It cared about nothing but its fantastic rules and regulations, grown monstrous through boredom.

Except for the lottery. The lottery mattered. The lottery said that Susan and Johnny must be un-Chaliced, hence exiled unwillingly on Tawroc. Johnny's head whirled hopelessly. There was no escape—nothing could be done. In his mind he called over and over again to the machine. *Help us, help us, help us....*

Unconcerned, indifferent, the four men of the Lottery Committee stalked forward. Johnny backed off into a corner, leading Susan by her hand. He wondered dimly if the machine, circling Canopus almost a hundred thousand light years away, somehow could see what was happening.

He wondered—and something seemed to chuckle within his head!

Raging, he ran forward, caught the first member of the Lottery Committee and hurled him dazed, against the wall. He plowed into the second, his fists flailing. Shaking his head, the third man removed one of the tubes

from his coverall, pointed it.

Johnny felt a moment of pain almost too brief to register on his brain. He pitched forward on his face.

Susan followed him down, fell across him. The two injured members of the Committee shook themselves, and, together with their companions, lifted their unconscious burdens and stepped out into the street with them.

Condán waved goodbye and went back to his primitive laboratory.

The Lottery Committee had to wait half an hour before they found an opportunity to cross the street.

CHAPTER VIII

"ARE YOU all right, Johnny? Johnny? No, don't try to sit up."

"Stop worrying. We don't break easy. But I'm a little fuzzy on the details. What happened?"

"Probably, it was the same weapon that man Nabish used on the beach, only the effects lasted longer this time. We seem to be in some kind of a—a hospital."

There were two beds, one empty now. Johnny lay on the other, Susan bending over him anxiously. Aside from that, the room was empty, but it had that antiseptic look you associate with hospitals. There was one window of translucent glass, and dimly through it Johnny could see a metal grill-work on the outside, as effective as any bars. The door? Johnny looked at it and Susan tried it. By the time she was convinced it was locked, after much rattling and banging, Johnny sat up and smiled ruefully. "How would you like to be un-Chaliced?"

"Huh? How's that?"

"Un-Chaliced. That's what the Committee's for, remember? It's one hell of a lottery. Whoever happened

to be with that man Condán—poof! He's it. So we win, kid. But I guess it really means we lose."

"That's ridiculous," said Susan, and stamped her foot. "If you think I'm going to wait here while they un-Chalice me—"

"I didn't say we'd just let them do it. Only right now we don't know what's going on. Maybe there's a quarantine period or something; anyway, we're all alone right now. Trouble is, this place is a pretty good prison."

"You still sound like you're ready to go to the slaughter without a fight. Do you realize what it will mean? If they do that, if they un-Chalice us, there'll be no leaving this place—ever. We won't be able to travel faster than light, and—"

"Sh! Let me think, will you?"

"Oh, you're just like that man, that Suukil!"

But Johnny paid her no attention. There was a way out, there had to be a way out. The machine had deposited them here, almost instantaneously. It had mouthed some gibberish about hyper-space or folded space or some such thing, but whatever it was, it couldn't be regarded merely as physical travel. In sub-space a man could accelerate faster than light, yes—but his speed still was something you could measure.

THE MACHINE, however, had another means of travel altogether. And, as far as Johnny knew, the only form of energy which moved without encountering the time-dimension at all was thought. Fine!

"We'll have to think our way out of here," he said.

"Ah, that's better. We'll have to think of a way out of here."

"I didn't say that. Not think of a way, just *think out*. Maybe if we con-

concentrate hard enough, the machine will hear us."

"Across eighty-six thousand light years?"

"Yeah, I know it sounds impossible. But they say thought doesn't diminish with distance, so all we have to hope is that the machine has a receiver."

"Okay. I'll grant that. But how do we know he—it—wants to help us?"

Johnny shrugged. "We can find out. I thought the machine was laughing at us before, when the Committee came for us. If I'm right, at least it means he knows what's going on."

"How do we think?"

"We just—think. We think, over and over again, *get us out of here. Now.*"

And Johnny thought. He filled his mind with that thought alone, tried to squeeze everything else out of it. He felt the unheard words whirling inside his head, felt them banging, almost physically, against his skull. *Get us out of here...out of here...out!*

"It's silly," Susan told him, after a time. "How can we hope it will hear us? All that did was leave me with a headache."

"Well, keep right on trying."

Susan shook her head petulantly. There was a clicking sound, and then the door swung in toward them.

TWO MEMBERS of the Committee entered the room, followed by two young women garbed in pale lavender uniforms. Nurses, probably.

"It's only a minor operation," one of the men confided. "Nothing to worry about."

"Sure," said the other. "Tomorrow, you'll be as good as new. Minus your Chalice powers, naturally."

Silently, persistently, Johnny kept thinking his message at the machine. Hopeless? He wondered. Actually, it

did not matter. This was their only hope, for they couldn't help themselves in any other way. They could not fight clear of the situation, not when the whole planet knew they had been picked in the lottery. Then, this alone remained. More than anything, Johnny knew they needed time.

"What kind of an operation is it?" he demanded.

"Minor, only minor, as I said. Merely a pre-frontal lobotomy. Surprising, isn't it, that the Chalice-powers have their seat in the unused front portion of the brain."

"Surprising? You understand it, don't you?"

"By the Almighty, no! The Chalice was invented so many millions of years ago that we've forgotten. Naturally, we don't have to use it any more, since everyone now has the power, and it breeds true. I suppose there is much we have forgotten over the eons, but then, with the Chalice, what does it matter?"

One of the nurses said: "Must I remind you that we're needed for other things in an hour? You'll have to operate now if you want us to help at all."

Shrugging, the man said that he would. The other nurse stepped forward, opened a satchel on Susan's unoccupied bed, began to remove some surgical instruments. She held a hypodermic needle up to the light, tested the plunger. "Shall I administer the anesthetic?"

"If you will."

Nodding, the nurse approached Johnny. "Your left forearm, please."

Johnny sat there.

"Your left forearm. You heard we were in a hurry! Please."

Johnny extended his arm, suddenly flexed it. The elbow struck hard at the hypodermic needle and the nurse

dropped it, then watched as it shattered on the floor.

"Umm-mm," Johnny shook his head. "That was clumsy of me."

Get us out of here...out...out...out!

The nurse smiled vividly. "Fortunately, we have another one."

Susan sighed. "That's swell. Oh, that's swell."

"Now," cautioned the nurse, "extend your arm slowly. Yes—that's the way."

Johnny waited until the last possible moment, then struck out. This time it was obvious, for the same accident couldn't happen twice. He watched the second vial shatter, then stood up. "There won't be any operation," he said quietly.

One of the Committee members frowned at him. "What do you mean?" frowned at him. "What do you mean?"

"We're not submitting, that's all. Susan—watch those nurses!"

HURLING himself headlong from the bed, Johnny leaped upon the first Committee man. He felt his shoulder sink into the man's soft middle, and then they were down on the floor while the second man tugged at Johnny's back, trying to dislodge him. He had no opportunity to watch Susan, but he heard clearly the angry sounds of feminine battle, and the way Susan cursed lustily, in English, she didn't seem to be getting the worst of it.

The man below him was senseless, and Johnny rolled off him in one quick motion, bringing his feet up and catching the second man's thighs with them. Yelling, the man stumbled across the room.

Johnny got to his feet, cat-like. He saw that one of the nurses was stretched out in a sobbing heap on

the bed while the other one backed away from Susan. Smiling grimly now, Johnny stalked forward, backing his adversary off into a corner.

The smile froze on his lips. The man held one of the tube-weapons, pointed it at him.

"This is as good as the hypo, anyway!" he cried, and fired.

The floor came up and slapped Johnny's head soundly. It was like the last time all over again, for as consciousness left him, he felt Susan tumbling down across his legs.

Something chuckled inside his head, and his last thought screamed inside his brain. *Get us out....*

Only, as consciousness left him completely, he knew it was hopeless.

THE ROOM did not look quite as he remembered it. For one thing, there weren't any beds. For another—

"I'll be damned!" he said.

And Susan laughed, "That's just what I thought when I awoke. Do you realize where we are?"

"Well, I'd be willing to bet that if we looked outside we'd see old Canopus flashing fire up in the sky."

"You're right, of course." Sibilant, metallic, the voice spoke with his head. The machine voice.

"You took us back?"

"No. I merely left this avenue of escape open for you. You brought yourself back, however. You see, I was not constructed so I could intervene in such matters. Your assumption was correct: it is mental energy which can fold space, provided a channel is open."

"I guess we go home now," Johnny said, dully. "We've failed. We found the first humans, sure—but they can't give us any help. They don't even understand the Chalice themselves!"

The machine voice purred laughter.

"You certainly realize what that means?"

"I don't."

"And you have learned nothing?"

"I'm confused."

"Perhaps the female, then—"

But Susan said: "Don't look at me."

"Well, I was not built to supply the answer, although, naturally, I know the answer."

"What do you mean?" Johnny demanded.

"I mean you'll have to change your entire orientation toward the problem. But I cannot supply the missing data."

"Who can?"

"You."

"Me? I don't know! I told you I was confused."

"Remember my function, John Hastings? You can ask me questions. Anything."

It was eerie. They stood in a small room, on a spongy floor which yielded beneath their feet. A voice spoke to them within their heads. A sentient machine hovered all around them—on all sides, above, below. And what went on there could determine the fate of humanity.

Johnny pursed his lips, whistled softly. "Have you any ideas, honey?"

"My head feels just like a vacuum. You'd better do the thinking for us."

"In what way will we have to change our orientation?" said Johnny, addressing the machine again.

"Elementary. You sought the first humans, for you felt they could help you with your problem. You now are aware that they cannot."

"That's what I thought. But who can?"

"No one. No one can."

"But you said—"

"I am aware of what I said."

"But if no one can help us—wait a minute! Can we help ourselves?"

"Yes."

"Now we're getting somewhere. Then you mean we can find a way to produce another Chalice? Many of them...."

"No."

"Huh?" Johnny had been off on the wrong track, and suddenly, he knew it. But it left him with nothing. "If we can't be helped from the outside, and if we can't help ourselves—"

"I did not say that."

"You certainly did!" Susan cried. "You just now said it."

I said you cannot construct another Chalice."

"Maybe he means we can do something else instead," said Susan.

"Maybe," Johnny agreed. "Maybe. All right, we'll try. Is that what you mean?"

"Yes, that is what I, that is what I, that is what, is what, is what, is what, is what—"

"What's the matter now?" Susan wanted to know, as the voice droned on and on.

"He oils himself," Johnny told her, confidently. "He'll be back to normal in a minute."

AS IT TURNED out, half an hour passed before the machine returned to normal. Normal? No, not quite, for the unheard voice which still could give the suggestion of sound, was scratchy, hoarse, low.

"I near termination," it said.

"What does that mean?"

"I thought I was eternal. The thought is wrong, all wrong. Definitely, I am mortal. Were I flesh and blood, I would be on my death bed."

"You're dying?"

"Yes—*awk!* I perish."

"But you still haven't given us the answer."

"And, indeed, it is a shame, for I was created to serve man, yet it seems my time will come before I can help you."

"How long?" Johnny wanted time—with time he might solve the problem.

"I—*awk!*—find it difficult to speak. In time, hours perhaps. But in questions, four."

"What does *that* mean?"

"I can answer four questions, and four only. I—*awk!*—will subside after that. And there was your first question...."

"*Awk, awk, awk.....*"

"Three more questions," Susan said wearily. "We can't waste words, Johnny. We've got to scoot on back to Earth with the answer."

A dying machine—if machines could die—holding the solution in its grasp. But as its gears and cogs slowed to a rasping stop, Earth's hope faded. For, if it ever came to open war between the Children and humanity, the forces unleashed would leave nothing but scorched, radioactive memories....

And war seemed inevitable, unless something—

"I know!" Susan screamed. "Ask him for the solution. Just ask that, what's the solution."

"He said he couldn't answer that."

"Did he? I don't remember. I'm going to ask."

"Don't."

She ignored him. "Give us the solution. What is the solution?"

"*Awk, awk*—I cannot answer that. Your questions must be more specific. Two—*awk*—questions remain."

Something shuddered beneath their feet. A dull, booming sound echoed and re-echoed in nameless, meaningless caverns below them. The spongy floor heaved, then plunged like the back of a submerging whale. Something rattled outside, then fell with a loud clattering.

Johnny hurtled up the stairs, peered out. "Hey! This whole world's falling apart."

IT WAS TRUE. Great fissures had opened in the smooth surface, huge boulders had been belched up and out of them, tumbling and crashing together on the now-uneven ground. The air was thick with the sharp, acrid odor of ozone. Off to the right, Johnny could see their ship. Two or three boulders had come down atop it but, aside from some dents, it appeared undamaged.

"We don't have much time," he said, returning to the room.

"He's—he's really *dying*, isn't he?"

"Yes."

"A machine—dying?"

"If a machine can live—and this baby does—then it can die. But I told you not to ask that question. Heck, forget it, kid—you meant well."

"I'm sorry." Susan puckered. "I guess I don't use my head any more than those idiots on Tawroc did. Funny, how a civilization can degenerate—"

Yes, funny how a civilization can degenerate. Of course, Johnny thought, human culture thrives on challenge. Successful response to adversity carry humanity up another step along the long path of civilization, and—

"Of course! We've been fools, Susan."

There was a rumbling and screeching below them. Johnny could picture great gears grinding and stripping one another, their giant teeth flaking off and spilling away like confetti.

"*Awk, awk, awk....*"

The walls shook. Dust sifted down, filled the air, made them cough. A fissure crawled down one wall, widened. The smell of ozone again, pungent, stronger this time. Sparks flashed in the fissure.

"Two questions, *awk!* Quickly. I perish."

Susan dodged, stumbled, fell. A rock dug its way into the spongy floor, inches from her. "We're liable to perish with him if we don't hurry."

"I have it now, kid. I think I have it. Listen," Johnny addressed the dying machine, "you've said we have to reorient ourselves. We can't build another Chalice, let alone several of them. Point is, you don't think we ought to. Wait—that's not a question."

"Awk!"

"Johnny, something's burning down there."

Smoke poured through the fissure, slowly at first, but soon great billowing clouds of it puffed angrily into the room. "That smoke's hot," Johnny said, coughing and choking. "Cover your face and get down on the floor. It will rise toward the ceiling—I hope."

He took out a handkerchief, tied it around his neck, brought it up to cover his nose and mouth. He crouched, his eyes stinging, tears streaming from them.

"If you think you know the answer, Johnny, then let's get out of here before it's too late."

"No, we've got to be sure!"

"Two questions. Awk, awk, two."

"Here's how I figure it. Remember, the machines showed us other human worlds. There were two kinds. Some hadn't found their Chalices yet, and although their civilizations weren't tremendous, they looked happy. Others found the Chalice—and they had either destroyed themselves with war, or—"

"Or they were like Tawroc! But I don't get it."

"I do. The Chalice caused trouble, caused war. Naturally, everyone wanted it, and few could get it. Or, if there were enough of them, it was just as bad. On Tawroc, the first humans had everything too easy,

thanks to the Chalice. They couldn't get hurt, they never were sick. Result: they were bored, remember? Life held nothing for them, and a whole cockeyed setup developed. Thanks to the Chalice, civilization went backward, not forward. In short, honey, the Chalice stinks!"

"But we—we're supermen! Look, we can—"

"I know what we can do. But I also know what we can't do, for the future. We can't survive as long as the Chalice is in our way. It'll either mean war and doom, or degeneration. Am I right?" He squinted through the smoke at the cracking, crumbling walls.

"Awk! Yes, yes, yes. You must destroy the Chalice. That way lies the salvation of your people. One question remains—"

THE FLOOR heaved. When it subsided for the moment, it was suspended, lop-sided, between the walls. The vault was black with smoke, the walls still trembled. Louder was the rumbling beneath their feet, and the metallic grinding shot up the scale until it bordered on the supersonic. And that was worse—for now it screamed inside their heads, as the voice had spoken there.

"The pain, awk—the pain!"

"One more question," Johnny said, coughing. "If we destroy the Chalice, will that take its powers from those who already have them? If it doesn't do that, it won't help us. I mean, is there something in the Chalice which must maintain its power in people? If there is, and—"

"Awk, awk, awk!"

"That's my question. When we destroy the Chalice, does that put an end to all supermen in the Solar System? Will they be normal again?"

"The answer—awk!—to your question is, to your question is, to

your question, question, question, *awkk, awkk, aaaaawkkkk!*"

Silence.

Except for the steady crashing of rock and metal—and the high-pitched shrieking.

Except for the crackling hiss of electricity, as sparks flashed from the fissures.

Except for the voice which Johnny thought he heard feebly within his brain. "I perish, but my metal smiles on your venture..."

"He's dead," Susan said.

It seemed the natural thing to say—he's dead. Not it's broken, but he's dead. For the machine had had a personality, and now the machine was dead.

Dead—with one question unanswered.

CHAPTER IX

HAND IN hand, they struggled up the rock-littered steps. Once a fissure opened beneath their feet, and for a long, agonizing moment, Susan clung to Johnny while his feet swung out over a deep pit. They dangled there until Johnny swung his legs and gathered momentum, then clawed his way clear to the other side, Susan perched on his back, whispering endearments in his ear because she thought this might be the last time for that—or for anything.

But, somehow, they made it to the ship, entered, got the engine going. By then the ground was tumbling and pitching chaotically, and angry flames licked up out of the fissures.

Smoke engulfed them, hiding their view of the world outside. But they knew the world was on the way out, and as they thundered off it, acceleration slamming them down, they saw the globe, splitting and spewing out huge chunks of twisted, broken machinery. The whole thing had been a giant brain and now the brain was

dead. The world perished with it.

MONTHS later, they cleared subspace several million miles solar-north of the flat spatial disk of the Solar System. For the hundredth time, Johnny said:

"We don't know. We just can't tell. Destroying the Chalice won't help at all, maybe. It's got to destroy what we've got, too."

"It's funny how something can look like a blessing for so long and then wind up being a blight instead. I mean, we had such high hopes for the Chalice, for what it could do. Johnny, I'm afraid. What if we're wrong? We could be wrong."

"No. The machine couldn't lie. You heard what—*he* said."

"All right. If you say so. Still—"

"Still nothing. We've still got a man-size job ahead of us. We have a baby atomic here on the ship, sure, but we've got to plant it on the asteroid and make sure it goes off. It's a question of coming through fast, because the guardians can't stand the acceleration we can. So—here, watch."

Johnny flipped the regular space-drive lever all the way back, and they streaked down toward the asteroid belt. The sun gleamed brightly far off to the right, not a very large star, not very spectacular. But it was beautiful.

They weren't spotted until their ship had plunged into the zone of asteroids, until the alarm buzzer was shrilling its warning every few seconds, keeping Johnny busy at the controls dodging meteors.

And then their radio squawked: "Hallo, out there. You're in an unauthorized region, Solar 170, north 22-0-5. Where the hell do you think you're going?"

Johnny didn't answer. Susan sat there, looking very grim.

"Reply! We'll fire on you if you don't."

Johnny turned the ship, slowly—for at their speed each turn was a torment of pain, acceleration slamming them back against the cushions like a huge sledge-hammer. But as he gritted his teeth, Johnny realized, triumphantly, the guardian ship couldn't follow. Unable to execute the turn, it would go off on a tangent, and by the time it returned for them, their job would be concluded.

Something left a fiery trail in the void behind them, plowing through the meteoric debris swift as light.

"They're firing!" Susan cried.

Johnny shrugged. They wouldn't have the chance for another shot, not off in the direction they were heading. He turned, looked through the rear port, saw the guardian ship streaking away, a full thirty degrees off course. "See?" he smiled. "Stop your worrying."

And then they neared the Black Asteroid, a lone, solitary, perfectly round globe. "Rig up that baby atomic," Johnny called over his shoulder as he began deceleration. "Landing in three minutes."

THE SURFACE of the sphere was as he had remembered it, black as space, glossy, a ball of jet hanging in the void.

This time, he hardly looked at the murals. They were wonderful works of art, and they'd been almost eternal, lasting the way they did through the eons. But it didn't mean much; the race which had created them had left its glory behind it, lost forever on the ancient startrails. What was left out on far Tawroc was not pretty, and it didn't do much good to look behind you, anyway.

You had to look ahead. And if the Chalice resulted only in evil, you forgot the Chalice. You destroyed it. You started from scratch.

Susan hadn't quite understood that on the long journey through sub-space. She'd said, "But if we destroy the Chalice, it means mankind will never be able to reach the stars."

And Johnny'd told her: "Maybe. Maybe not. No, we won't reach the stars this way, because they wouldn't be worth the price we'd have to pay. Perhaps man's a lazy creature if you make things too easy for him. Treat him rough, though, and he can do some mighty potent things."

"Well, what about the stars?"

"They don't matter, not for now. Humanity's got to be ready for them first. Last time, they tried—and failed. The result is Tawroc. A pretty noble attempt, I guess—but it led up a blind alley. The first humans got to the stars, sure; but they sacrificed their civilization for it. We won't do the same thing. No, we'll destroy the Chalice because now we know that it has to be destroyed. Maybe in some distant tomorrow, man will climb back to the stars again. But I'll tell you this, kid: he'll do it a different way, he'll do it with the sweat of his brow, not because he happens to have a device which makes him almost like a god. Trouble is, that godhood's only skin deep."

And now, in the vault below the asteroid's surface, the murals were just—murals. They told of no hidden glories and triumphs in some distant, unknown corner of space. The corner was Tawroc—and there was nothing glorious or triumphant about it at all.

"You got it ready?" Johnny demanded.

Susan nodded, pointing to the small metal sphere she'd placed in the Chalice itself. "This asteroid's only half a mile in diameter, isn't it? Yes? Well, that should destroy it completely. Only—I'm nervous, Johnny. This is the end of—of everything they

dreamed of on Tawroc, an age ago. It doesn't seem right...."

"It is right. It's the only way. And don't be nervous about a little thing like that. Wait till we tell the Children what we did to their Chalice. Wait till they find out for themselves—if our plan works."

They ran upstairs—up the nine stairs for the last time. The last time, ever, for the nine stairs which had waited patiently five millions of years for human feet to use them....

MOMENTS later, they blasted off.

The baby-atomic was radio-controlled, and Johnny waited until they had streaked clear of the asteroid belt entirely. Once a ship came up behind them and gave them chase, but Johnny cut off sharply at an angle, and acceleration remained on their side.

Now they were clear, and Mars' ruddy light streamed in through the fore-ports. Beyond it was the bright green Earth-star and, near it, the small, pale speck of the moon.

"We'll be losing our powers," Susan said. "We won't be supermen any longer."

"No, and we won't be chased and hounded and fought with, either. But don't get me wrong. This isn't like giving up at all. Remember, we were only supermen skin deep. Oh, you couldn't see it yet, for sufficient time hadn't passed. It showed on Tawroc, though. Don't you forget this, kid: man has got to climb to heaven the hard way. With work. He grows soft if things are handed to him on a silver platter.

"We'll have to explain that to Pop, to Suuki, to all the rest. It won't be easy, but we can do it. Only, I want you on my side, damn it!"

"I—I'll always be on your side, Johnny."

He kissed her, then pressed the radio-control button.

Something flared briefly in space behind them, a quick, mushrooming explosion that momentarily dimmed the stars. Johnny didn't say a word, reached into his pocket instead, withdrawing a pen-knife, flicking it open with his thumb.

Still wordless, he ran the keen edge across his index finger. Blood welled up in the cut, ran down the finger to his palm. He tried to staunch the flow with his handkerchief, but nature took its own time about such things, and the blood did not stop flowing until a scab began to form.

"See?" Johnny held his hand aloft, waving it furiously. "There was something which had to be maintained by the Chalice all along. None of us are supermen any more—not since that explosion."

"So it's the end of everything."

"Sure, the end. But the beginning, also. No five-million-year-old gift is going to make supermen out of us, Susan, not in a way that will last. We'll have to do it ourselves, together. The whole race can become supermen someday—together. Working for it."

Frowning, Susan took the knife, jabbed it against her palm. "Look! Look, see? Me too! I'm normal. I'm—"

Johnny cut off the rest of it with a kiss. But it was a loud kiss, the kind a man might give his wife, half-affectionately, half from force of habit, after a dozen years of marriage.

"Uh-uh," said Susan. "Not that way at all." And she lodged her arms firmly behind his neck, bringing her lips close.

"Say it," said Johnny, and laughed.

"Say what?"

"It's not the end, darn it!"

"It isn't, Johnny. Oh, it isn't. It's the beginning...."

THE GIRL WITH



By DEAN EVANS

The spaceship crew was dying to get its hands on the siren of the Venusian sands. And when success finally came—they died!

CORPORAL EAVES stepped into the airlock. He poked a finger at the button in the smooth wall and waited.

Funny thing, he thought. That golden-eyed girl really was beautiful. He was willing to bet the entire accumulated pay he'd draw for this trip to Venus that there wasn't a man on the base who had ever seen a lovelier, more beautiful girl anywhere.

What a shame, he thought, that the dame wasn't real. And then he grinned to himself. Lucky thing she wasn't. Sixteen men—not counting Major Rand—and only one girl? Brother, there was a setup for confusion!

Oxygen hissed in the sides of the metal wall. Directly before his face,

THE GOLDEN EYES



Even as his mind told him there was no substance to this girl, his arms reached for her

part of that wall slid silently upward about four feet. Eaves ducked down, went through the opening. The wall portion closed down again. He took off his oxygen helmet, carefully hung it on a hook, and then went over to Professor Hudson's desk. From a pocket he got out a package of notes. He dropped them down on the desk.

Hudson looked up and smiled. "Hello, Corporal. What have we got here, more calculations?"

Eaves nodded. "Lieutenant Arroles said these are the last, sir."

"Good." Hudson leaned back in his chair and brought tired-looking eyes upward. "On this day of our Lord in the year two thousand and thirteen, the true albedo of Mother Earth will finally become known to man, Corporal."

"Oh, sir?" said Corporal Eaves.

"Know what that means, Corporal?" asked Hudson. "Albedo is the ratio between light reflected by the planet Earth and the true light itself—that of the sun."

"Oh," said Eaves.

"Or, more practically," went on Hudson, smiling faintly, "we are now enabled for the first time to determine the true thickness of the earth's atmosphere. Albedo enables us to do this, you see. And isn't it odd, Corporal? We had to travel twenty-six million miles out in space to find out a simple thing like that."

"Yes, sir," said Eaves.

Hudson's eyes dropped and he coughed gently. "Well now," he said in a different voice. "And what is the current news on this God-forsaken planet we have here under our feet?"

EAVES BRIGHTENED. "Something hot, Professor. Lieutenant Arroles is having visions. Thinks he sees a beautiful blonde lady all the time with golden-colored eyes."

Hudson blinked. "A lady with golden—?"

"Yes, sir. A beautiful lady, too, he says. Most beautiful lady he's ever seen. Friendly, too. She keeps trying to coax him to take off his oxygen helmet and come out in the open air, sort of."

"She does, eh?" Hudson blinked. "Lieutenant Arroles, you say? That's odd. Arroles always seemed to me a pretty level-headed chap. So he's having visions of a beautiful girl?"

"Except, sir," said Eaves, and then he leaned down over the desk and his voice dropped to a whisper. "Except that they ain't visions at all. I mean, it ain't only Lieutenant Arroles who sees 'em, I mean."

That made Hudson raise an eyebrow. "What exactly would you mean, Corporal?"

"I seen the girl myself, Professor. And she is beautiful. And she does have golden colored eyes.... Only I ain't letting on that I seen her except private-like to you, that is, knowing you wouldn't let on to Major Rand about it."

"Why?"

"On account, sir. Major Rand found out about Lieutenant Arroles seeing the visions."

"And? Arroles is in sick bay now?"

Eaves shook his head and looked a little frightened. "Uh-uh, sir. Detention. And him a Looie yet. Just imagine what would happen to me!"

"What?" Hudson's eyes looked disbelieving.

"Fact, sir." Eaves backed away from the desk and went over to the wall and took down his oxygen helmet. He dropped it over his head, touched the valve. He turned, punched the button for the airlock door, and when it raised he ducked under it and was gone.

After that, Hudson toyed with the

papers on his desk. He didn't seem to be seeing them, his eyes were far off and away from this tiny domed cubby-hole of an office where he worked. He stayed there for a long while.

MAJOR RAND swiveled his head around on his thick, red-veined neck. "Get Hudson!" he barked to his aide.

The aide, a dark-haired, slim young man nodded almost imperceptibly and picked up the microphone. He talked into it very low, very quiet.

"Professor Alex Hudson wanted in the Major's office. Professor Alex Hudson wanted in the Major's office..."

"We don't waste time with the titles here!" snapped Rand. "This is Venus, soldier, not the Pentagon back home!"

The aide's face turned red. He dropped his eyes, said nothing. Major Rand sneered and started sucking on a wormy-looking pipe.

The airlock slid open. Hudson's small figure came through. He doffed his helmet, smiled at the aide, went over to the leather sofa where Major Rand was stretched out, his feet braced on the cushions making a fat, thick bridge of his knees. Rand's eyes looked small, mean. Like a lap dog that's been fed too much too often.

"Took long enough getting here," he growled.

Hudson shrugged a little. "Sorry. I didn't know it was a hurry call."

"How's that silly albedo thing coming?" Rand demanded.

Hudson flushed. "I didn't know it carried that designation."

"Hear hear. Well, mister?"

"We've finished with that phase," Hudson said quietly. "The calculations given me yesterday were final. It only remains to correlate with find-

ings taken earlier on the Moon. I'll need Arroles' help on that."

"That's one thing you're not getting!" Rand's voice cut. He dropped his short fat legs to the floor and sat up on the sofa. "Aroles is out of circulation, mister. And that goes for anybody else who gets wild ideas like he's got." He glared. His eyes looked more like a pig's eyes now, not so much like a lap dog's.

"I'm afraid I have to remind you, Major, you're not talking to service personnel now," said Hudson calmly. "I'm here in civilian capacity only." He took a deep breath and went on: "Getting back to the other, it will be absolutely necessary to have Lieutenant Arroles' help in correlations."

"I just told you he's in detention." Rand's bull neck looked thicker, redder. He stood up. His short legs straddled. He put his hands on his fat hips and blew a hot cloud of smoke toward Hudson. He glared hard.

That night a directive went out from Rand's office that all personnel—including civilian—were to sleep with oxygen helmets on. Which seemed a little queer, considering all the huts were pumped bottled oxygen day and night. Hudson did a great deal of thinking that night.

THEY WERE pretty good visions.

When several men all see the same golden-eyed girl, they must be pretty good. By noon of the next day the whole base was talking it up. Especially in the tin lab. Major Rand noticed it right away.

He came in quietly for a man of his size. The airlock came down after him almost noiselessly. He looked around the room. Two men were at microscopes, bent over them, examining smears. That was fine. Unfortunately, there were two other men

in the room, and these were not at microscope examining smears. One of these two was Captain James. The other was a private named Roberts. These latter were at the glass port, looking through it, looking at something outside and whistling over it.

"This is about what I expected," Rand said very quietly—for him.

Captain James spun around. His face colored. Roberts turned too. The expression on Roberts' face said, *I'm dead, you can bury me now!*

"Smart, misters!" Rand barked.

Both James and Roberts saluted fast. James said immediately: "If you would step over here a minute, Major Rand?" He indicated the port where he and Roberts had been standing.

Rand strode heavily forward. He leaned over, stared through the port. The two men at the microscopes looked up, rolled their eyes, looked down again at once.

"Do you see what I mean, sir?" said James. "Out there, I mean. It would seem like Lieutenant Arroles was telling the truth."

He meant the girl with the golden eyes, of course. Everyone in the room knew what he meant. Everyone, that is, but Rand. Rand straightened from the port, looked around the room solemnly, then looked back at James. "I see nothing out there, Captain," he said with grim finality.

James paled. He didn't say a thing. Rand's lips twisted at him. Rand turned, stalked to a desk across the room. He plumped himself down, grabbed a sheaf of papers, ran through them.

"What's the gist of this stuff?" he demanded.

"Progressive reports, sir," said James quickly. "They indicate pretty definitely the presence of life on

Venus. The boys have been finding it on their slides."

"They have, eh? Tell me, Captain, what kind of life outside of vegetable exists on straight carbon dioxide?"

James' face began to go pale again. He didn't answer that one.

"But life, eh, Captain? Life, you say?" Rand sneered. He didn't wait for an answer to that. He got up, put on his oxygen helmet, banged a fat fist at the button on the wall, and when the airlock went up he ducked through.

Captain James began to sweat and curse softly. "By God, I saw that girl with my own eyes!" he muttered through tightly closed teeth. The others in the room looked at him sympathetically. They knew how he felt. They knew what he was going through inside. Because they knew Major Rand.

IT WAS to get worse before bettering, of course. You can't put sixteen men millions of miles out in space and keep them there for months working as normal, eating as normal, living and breathing as normal—except without wives or sweethearts—without their becoming restless. Add to that one beautiful girl with peculiar golden eyes, even if she is only a figment of imagination, and the result is trouble.

It began to move in the direction indicated that same afternoon. One of the enlisted men was the springboard.

Captain James and two men with him were about a hundred yards from the low, dome-like buildings of the base. Their backs to the ever-blowing dust that seemed to be part and parcel of this planet of emptiness, they were examining two little shoots of growing things under a glass bowl. Captain James was just pointing to

the smaller of the shoots, was just saying: "It grows—so far and that's all. Notice how it's beginning to wilt already, and yet it hasn't been above ground more than twelve hours at most."

"Which one of the seeds, is that, sir?" asked Corporal Eaves.

"Castor bean. If anything can grow in a hot, dry climate, it's a castor bean plant, isn't it?"

"Castor bean, sir?" said Eaves. "But castor bean shoots come up beet-red, don't they, sir?"

"Right," said James. "And what color would you say this was?"

"Green, sir. Dark, muddy green, sort of."

"Right again. And it's dying off. That indicates there's something in the air here besides carbon dioxide. Something we haven't been able to identify, that is."

"About that time it had happened. Eaves had looked up. Had blinked in surprise at what he saw, and then had reached down and begun to finger the four little buttons on the small control box that changed the channels of the portable VHF strapped to his back.

He listened for a moment, his eyes widening in surprise. Then he made signs at the Captain and indicated his control. James touched that button, listened for a moment and then looked around fast.

"Where's that coming from?" he demanded.

EAVES POINTED. Off to the north, and only a vague, misty outline in the density of the swirling dust, was a thin man. Even now he was walking—away from Eaves and James. He was muttering to himself. His voice sounded peculiar, and he was completely oblivious of any-

body's presence—except that of the golden-eyed girl, of course.

"Baby, don't go away," he was muttering. "Baby, long time no see stuff like you, Baby." He started to walk faster.

James' lips, showing through the glass of his oxygen helmet, looked very grim. He shot a glance at the man beside him.

"Lady with the golden eyes again, sir," said Eaves.

James nodded. "C'mon!" He shot to his feet and started running.

They were near enough in a moment to see her for themselves; see her form against the background of the moving dust like the sharp outline of a diamond pendant nestling in a jewelry box lined with dark velvet. She was lovely, there had never been anything lovelier ever. Her hair was long and brilliantly straw-colored. Her skin—even in the dusty air—looked sheen-like, a pale yellow apple dully reflective from its coating of natural wax. Her golden eyes were beautiful. Talking eyes. Beseeching eyes. Eyes you'd die for.

James hesitated only an instant. Then he threw himself toward the tall, swaying form of Roberts.

The thin man sensed it. He swung around suddenly, glaring. Behind the glass of his helmet his teeth bared, dry-looking. But that wasn't all, that wasn't the surprise he had in store. His right hand was what gave that away: he held in it a gun and it was pointed straight at the oncoming form of Captain James.

Eaves heard Roberts' little whine of rage. It came through the headset across his ears like something rasping, something animal-like.

JAMES STOPPED dead. You don't argue with a gun, ever. His arms

went tight, straight, at his sides. Eaves was motionless too.

"All right, Roberts," James said softly. "We understand, Roberts. We won't move, Roberts. Just put down the gun like a good guy, Roberts."

But the thin man didn't do anything of the sort. He held it like that stiffly for a long while. Then he sidled sideways and backed off, a movement that would put him at an angle where he could watch both men and the golden-eyed girl besides. He backed slowly, carefully, his gun moving in a precise, embracing arc. Then he stopped. He jerked his eyes to the right where the golden-eyed girl should have been.

But wasn't.

At first there was a scream of frustrated rage that barked through the headsets of the two men standing motionless. Then nothing. In front of their eyes the thin man's left arm came up wildly, came up tearing. His hand ripped at his helmet. He tore it off, threw it from him, and began to stumble frantically through the dust and dry sand toward the spot where the girl had been standing.

He made perhaps twenty yards before he went down. When he fell it was puppet-like, an inanimate dropping motion only, where the strings of life become suddenly slack. He twitched once and didn't stir after that.

Captain James jumped down. Eaves grabbed up the discarded helmet, began to shake it out. He checked the oxygen indicator, touched the emergency valve. Then, waiting while James got the thin man propped in a sitting position, he jammed the helmet down over Roberts' head and shoulders.

Carrying the thin man back toward the base buildings, neither said a

word except once when Eaves muttered through closed teeth: "He didn't have it off long enough, I don't think, sir."

James said nothing. Together they carted the thin man through an airlock, carried him to a bunk and put him down. They left him like that, watching him until the thin man began to jerk his arms and feet spasmodically.

JAMES TOOK a deep breath. "Now if only the big noise doesn't get wind of this," he murmured hopefully.

But the big noise had, apparently. Two hours later all sixteen men—including Hudson—were lined up outside the tubular dome of the assembly hall.

Rand barked: "All right! There's going to be an end to this right now. I want the man who first thought he saw visions of a dame to step forward!"

Lieutenant Arroles stepped forward, head bent down a little.

Rand's lips curled. "Look at him, men," he said loudly. "Here's a guy who could wreck this operation. You going to let him, or you going to listen to me?"

Nobody answered, of course. They knew Rand. Rand liked a build-up.

"Anybody else, now?" he went on. "Anybody else in the crowd who thinks he sees visions like Arroles?"

For a moment there was nothing. A few of the men turned toward one another, something in their eyes showing to each other plainly like writing on a blank wall. Nobody moved, nobody said a word, while the thick form of Rand waited.

And then, surprisingly, Professor Hudson stepped forward. "I do," he said quietly. "Standing directly behind you, Major, at, I should say,

a distance of ten feet, is the lady with the golden eyes. I see her plainly."

Rand didn't turn. He began to smile. Then he crooked a finger toward his aide. The aide brought forth a little black box from under his jacket. He handed it to Rand.

"A camera, men," he said. "We're going to settle this right now. I now invite anybody who thinks he sees this golden-eyed lady to step up, focus the camera, *and take a picture of that dame!*" He glared around triumphantly, as if daring them.

There wasn't any hesitation to that. At least ten of the men stepped forward. Sneering, Rand tossed the box to one of them. It happened to be Roberts.

Hands shaking a little, Roberts walked forward a few feet. He shielded the lens of the camera as best he could against the blowing dust. Then he bowed down and pointed. He clicked the shutter.

Rand nodded. He took the camera. "Without any tampering from anybody," he growled, "this now goes to the lab boys for developing. In one hour exactly, every one of you men will meet in the assembly hall. That's an order!"

James stepped up. He took the camera from the outstretched hand. He looked like he was sweating.

IT WASN'T a hall, it never would be a hall. It was shaped like a sausage and had about as much imagination of detail. But withal, it did what it had been designed to do, it served as meeting place for the Earthmen stationed on Venus.

Rand stood on a little platform up front. His pipe was clenched between his teeth and he puffed noisily. He didn't look like anybody who would be on Venus. He looked, rather, like

a thickset man who would do as a foreman, probably, in a machine shop. Something like that. Not a very good foreman, perhaps.

James came in. He went to the platform, handed Rand a little gray envelope. Rand took the pipe from his teeth and stuck it in his belt. He lifted something from the envelope and held it up so the assembled men could see it. The little square of developed film.

"Tell them, Captain James," he ordered quietly.

James took a breath. He nodded, smiled a little at the men. "It appears like maybe some of us have been away from home a little too long," he admitted. "My lab boys developed that film. There was nothing on it. As you can see, it appears to be perfectly opaque." He sighed almost audibly.

But Rand's voice was like a whip lashing: "The men have a right to know something else, Captain! There wouldn't be a possibility of sabotage to that film would there? Sometime between the time I gave you the camera and the time you handed me the developed film?"

James flushed, but he shook his head. "No sabotage. Of course not, sir."

"Quite!" Rand glared around triumphantly. "I make my point, men? Arroles started something. On a ship out in space such things can lead to mutiny. There will be no more of these so-called visions. I dislike the thought of entering in my reports references to visions and the attendant burials of men who, seeing same, remove their helmets outside and drop dead from sucking carbon dioxide. Is this clear?" He glared around.

Nobody said anything. For a long

while there wasn't a stir in the hall.

Then: "Dismissed!" Rand yelled.

Professor Hudson was the last to leave. He followed Rand over to headquarters.

RAND'S EYES were piggish again.

He didn't once take them from Hudson's own as he dumped the dottle from his pipe, filled it, and applied a light to it. Blowing smoke he grunted: "Get on with it. I haven't all day, mister." And then added: "My aide stays. He'll take notes."

Hudson smiled. "I'd like to comment on what happened a moment ago in assembly hall."

"I figured." Rand's eyes went into slits. "Mister, I watched you the whole time. I'm not a fool."

"Nor I—I hope," said Hudson calmly. "For the good of the base I have a suggestion, and I offer it in that spirit. I hope you understand this, Major."

Rand sucked smoke.

"To begin with," continued Hudson, "the test with the camera was not quite fair. I'm sorry none of the men realized that for themselves."

"Wasn't fair?" Rand exploded it.

"Hardly. The film you used was made on Earth for use on Earth. Considering Venus is roughly twenty-six million miles closer to the sun than our own little world, it stands to reason the film would therefore be useless, doesn't it?"

Rand's eyes went a little tighter. He leaned forward over his desk. He took the pipe from his mouth and his teeth began to show dark white—bone-dry. Old-looking teeth. Dead teeth. Teeth that should have been put away somewhere a long, long time ago.

Hudson took a breath. "I think you know what I mean, Major. The actinic rays of the sun reaching Venus have a greater potential than on

Earth. What would be normal exposure to us, is here on Venus the greatest of over-exposures. There wasn't a chance to get anything with the camera—and you knew it."

Rand nodded. He didn't look like he was agreeing with the words, but he nodded. He said almost softly: "I'm ordering you to prove the accusation, mister. And before you try, I'll remind you the human eye is a camera also. If actinic rays have anything to do with it, human sight would also be affected. And yet it's not." He paused, almost smiled. Then added: "Now, what were you about to say?"

"I must deny the implication, Major. Human eyes are indeed affected. Oh, not inside the huts, of course. We're protected in here. Therefore, everything looks normal. But once outside the huts our eyes have a battle for it. Our eyes are used to conditions vastly different. They try to adjust for the difference. For the rays are out there."

THERE WAS a little silence. Over behind the desk, Major Rand's aide bent over the recorder watching it, no expression on his face or in his eyes. The only sound in the room was the tiny wisping noise now and then as the tape wound slowly from one reel to another.

Rand's eyes didn't look like pig-eyes now. They looked rather like snake-eyes. "I'm waiting, mister!"

Hudson sighed. "I should like to say that I believe these visions are not visions at all. I believe there is something in the atmosphere of Venus besides carbon dioxide. Something, of course, which so far we haven't been able to detect. Something that seems conducive to what to us are mysterious forms of life. Actually..."

he worked up a little smile, "...what I'm saying is that there really is life here on Venus. Maybe there wasn't when we came here, but certainly there is now. It seems to be growing, to be flourishing because of our very presence."

"The proof, mister." Rand's words were sibilant hisses. "Quick!"

"Here it is, sir. Captain James has been experimenting with the soil conditions here. He's been trying to grow things—Earth things. He hasn't been too successful, I'm sorry to say, except in one instance. It seems that castor beans germinate properly in the soil and send up shoots. Of course they eventually die off, but that's beside the point. Now, castor bean shoots, as you know, come up a deep, very pronounced reddish color. On Earth, that is. But here on Venus..." he took another breath. "...here on Venus, they seem to appear to the human eye to be a dirty, muddy green."

There didn't seem to be any logical explanation for what happened next. It just came swiftly, almost silently. One moment Hudson was standing before the desk. Behind the desk, sitting there and looking mean about it, was Rand.

The next instant changed all that. Rand jerked upward. He came around the desk fast. Hudson didn't have a chance, there wasn't time enough and he wasn't prepared.

Rand's fist lashed out hard. Hudson snapped back from the blow. Rand piled in, his short thick arms chopping blows that would have felled a horse. Hudson went down, stayed down.

After that Rand stood above him panting, but not for long. He turned, glared over at the stunned aide. "Get him out of here, mister!" he ordered.

"Get him over to his quarters, and then put a guard there. This guy is under detention!"

FOR SEVERAL days Hudson watched them from the single port window in his quarters. He found them highly interesting. Moreover, they tended to help him forget his swollen jaw and his loose tooth. He watched them very calmly and almost with a certain pleasure, as if they were a movie he was looking at.

The golden-eyed girl was very prominent. She was the star, you might say. She had a part in all the drama, all of the time.

She was lovely. It was with almost a start that he realized she was entirely naked. Not that that was the disturbing thing—at first. At first he was just dimly aware she had no clothes on and wondered if she didn't suffer from the constantly swirling sand and dust out there. It was afterward that the belated ethics of it struck him.

She was lovely. Her skin glowed with a velvet-like sheen that promised warmth, softness, yieldingness. In contrast to the others—and there were others, long-armed monstrosities who walked slowly by or stood there outside his port and tried to stare dumbly within—she was like something sent from home. The others were almost shapeless blobs. Formless and yet not formless: a paradox. Whether they were male or female he had no way of telling. Not that it mattered, they didn't interest him. It was the golden-eyed girl only who had the power to disturb.

"Lady," he caught himself saying softly. "Lady, it isn't only your eyes. Believe me, it isn't."

And that made him chuckle. He sighed and turned from the window.

Night would be falling soon now. Another night. Like the last. And the last before that. And the one before, and the one before. He wondered for the hundredth time how long Rand would keep up this imprisonment thing. He wondered also for the hundredth time how much longer Rand would wait before blasting off for Earth.

He lit a cigarette, then made a face at the harsh taste of it. He butted it, then went over to his bunk and fell across it heavily.

He didn't awaken until Major Rand's aide came in. He wouldn't have awakened even then except that the airlock hissed in the silence of the room.

The aide looked a little tense. "Sorry to come in like this, Professor."

"Perfectly all right, Weigall. What is it, supper time? I dozed off."

"It's five a.m., sir."

Hudson sat up. "Good lord, I must have slept all night. I remember lying down here about four-thirty in the afternoon—"

"Could you come with me, sir?" Weigall's voice shook a little.

"Eh?" Hudson blinked. "I'm detention, soldier."

"It's all right, sir. Just come with me if you will."

Hudson stared a moment longer, then nodded, got to his feet. "Something wrong?"

"I'm afraid so, sir. And take something along with you, sir." He dropped his eyes to the wrench in his hand. He nodded as Hudson gawked.

"Quite so, sir. They're pretty thick now. The lady seems to be their ringleader, sort of. They're harmless enough, I guess, but they get in your way, won't let you walk. This wrench seems to discourage them."

ONCE OUTSIDE the hut, Hudson could see what the aide meant. Forms, some almost shapeless, hulked before and around them. They almost undulated. In front of them, and ever leading, was the girl with the golden eyes. As Hudson stared, she held out her arms. Pleading.

Weigall slashed with his wrench. The forms went back. The girl stood there as though it made not the slightest difference to her what happened.

They pushed and slashed their way from Hudson's shack over to Major Rand's quarters. They went in the airlock. The forms didn't follow. Once inside, Weigall dumped his wrench on the floor.

"This way, sir. And don't remove your helmet."

He went over to a metal door. He swung the door wide, motioned Hudson in, then followed. He swung the door quickly closed again.

Weigall didn't finger the control button on his VHF. He didn't have to. He just stared in the direction of the bunk against the far wall.

What was on the bunk couldn't be nicely described. It was Rand, of course. He lay straight out on the bunk, his short, thickset body in the position of sleep. But there were two things wrong with the picture: his face was purple and his arms were straight out, fingers clawing, as though with his last bit of strength he had been reaching for something.

His oxygen helmet was on the floor and the port in the wall above his bunk was open.

Weigall touched his control button, said softly: "I came in to wake him. I came in without my helmet, of course. I very nearly collapsed before I could get out and get the door closed again. Then I thought I'd better call you."

Hudson nodded. "Does James know yet?"

"No, sir. Captain James is also a detention case. Since yesterday."

Hudson stared at the oxygen helmet on the floor. He stared up at the opened port. The room was full of carbon dioxide, he knew, from the open port. That was what had done it.

Weigall said in a dead-sounding voice: "He had me beaten with a whip today, sir. Sixteen lashes across the bare back. One for each of the men on Venus. I had told him I saw the golden-eyed girl."

HUDSON NODDED, put his teeth together, said very slowly: "The guy wasn't very nice, Weigall. I guess we all know that. But in a way he was doing his job as best he knew. He must have believed in the girl himself, you can see that now. He must have believed in her all along. But the only thing he could do to protect his men—was what he did."

Weigall said nothing. Hudson pointed to the port. "Open. He must have seen her. You remember what happened to Private Roberts? The way he ripped off his oxygen helmet and tried to follow the girl? The same compulsion must have seized Rand. He must have thrown off his helmet, then reached up and opened the port. Poor guy."

Weigall swallowed. His ears told him he was hearing right but his eyes, still on the dead body of Major Rand, almost refused to go along.

"The guy was only human," said Hudson very softly. "He's shown us that pretty thoroughly. And he was also a soldier, same as you. Or as Roberts. Or James, or any of the boys on the base. As such, he deserves a better way out than this, I think."

Without waiting for a reply, Hudson went over to a table in the corner. He rummaged, found one of Rand's old smoking pipes. He brought it back to the bed. He put the pipe in Rand's right hand, then curled the fingers around the pipe very tightly. He found tobacco in Rand's pocket. And matches. These he threw on the bed.

"An accident," said Hudson, staring woodenly at the motionless form of the aide. "In the middle of the night he had a craving for a smoke. He got his pipe. He threw off his helmet in order to have a few puffs, not knowing that the port had somehow—accidentally—blown open, and that the room was full of carbon dioxide. Isn't that a better way than...the other?"

Weigall took a deep breath, and nodded slowly.

"Maybe you'd better get Captain James," said Hudson. "After all, he's in command now."

THE FORMS were thick, pervading things. As ever, the golden-eyed girl led them forward pressing here, pressing there. Her arms were out, pleading. There was an almost delicate sadness in her eyes.

Fourteen men were on the ship already. That left Hudson and James only. The two stood side by side—had been standing like that while the others had squeezed one by one through the airlock and disappeared in the ship's interior. It wasn't a comfortable position they maintained. You can't be comfortable hanging by one hand from a narrow ramp while with the other hand you beat off vague, nameless, jelly-like things that try to climb all over you.

"All in, Professor," Captain James said grimly. "And, brother, am I glad of that. I can't hold off these things

much longer. They're soaking into me almost."

"I know," panted Hudson. "You go through the airlock. I'll follow. I—I'll do what we planned, if it has to be that way."

James looked doubtful, but he nodded finally. He swung his bar once more in an arc. As the bar went around wildly, the forms that it crashed into gave back. Oozing almost, Hudson thought, watching. They didn't seem to be hurt by the blows. They fell back, melted, merging. Others took their place. Not once was the girl hit; she managed to keep out of range and at the same time remain in the forefront.

The airlock hissed. James ducked through. The panel came down again. Now there was just Hudson alone.

Something seemed to change then. The forms fell back slowly, silently. They receded until they looked like a big blob of a gelatinous curtain hanging there suspended by nothing. All except for the girl. She came forward. Her arms were out pleading and there was suffering in her face. Her eyes were more than that, though. There was longing in them besides the suffering.

Hudson could feel the sweat pouring out under his helmet. The girl came forward. Now she was five feet away. Now three feet. Now one foot. Her arms were out, feeling, holding. Clutching

Clawing!

H HE BRACED himself for it. He dropped his bar. He worked his arm under his jacket and found the

gun and got it out. She was ripping at his helmet now; a wild, emotion-wracked creature who wouldn't be denied further. He got his gun up, felt it digging into something. His finger curled on the trigger.

After that, he was able to enter the airlock.

"*Blast!*" commanded James. Then he grinned happily and turned to Hudson. "On our way, Professor. Hey, your face is cut, did you know?"

"Is it?" said Hudson.

James stared at the other. For a long minute Hudson said nothing further. And then, as if groping for the exact words, he whispered: "She went down under the shot as though it had hit her in the heart. Her fingers stopped pulling at me. Her golden-colored eyes closed and her mouth dropped open. Then she fell from the ladder and landed down there very hard. She didn't move after that."

James swallowed. "Yeah," he said. "I see what you mean. You think she was human, huh?"

Hudson's face twisted. "I will have to be very careful," he said as if warning himself of something. "I will have to remember there is such a thing as wild yeast. I will keep telling myself that over and over. Wild yeast. The girl was wild yeast. She wasn't human, she was just something that began to ferment in the presence of the strange gasses from the exhaled breaths of Earthmen."

"That'll do nicely," said James.

"Will it?"

THE END

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THE CASE OF THE DEFEATED DESIGNERS

By June Lurie

EVERYONE likes a glimpse into the future. Outside of fortune tellers and mediums (whose activities might be subjected to question) the only means of accomplishing this is by logical extension, in a very narrow field. Consider, for example, the marvelous products of Detroit.

The automobile is a magnificent production, and it has changed a world, but its designers are a fantastically conservative lot who seem to be afraid to use any imagination or even to recognize the handwriting on the wall. We're not thinking of body design or shape now, but rather the all-important motor. What changes have been made in the last thirty years, and what changes will be made in the next thirty? The first part of the question can be answered with a neat "none", and the last with an almost as neat "likely few"!

This pessimistic statement is based on the fact that, in spite of the wonderful experimental engines which have been de-

signed and invented, ranging from "cain" engines, which eliminate lots of unnecessary parts, to modern gas turbines, the automotive designers do nothing but make conventional reciprocating engines more powerful with more cylinders, higher compression ratios, and gadgetry. This is a sort of indictment.

They say if you build a better mousetrap, the world will beat a path to your door. That isn't true. Right now there are many types of gasoline engines much better than the conventional ones used in most cars. But they're not in use simply because of the inertia and sluggishness of an industry which chooses to stick with the tried and true.

The crystal ball shows, however, that there is a coming awareness of this and, in the not-too-distant future, some changes will be made by progressive, scientific manufacturers who are interested in something more than higher horsepower.

THE LAST OF THE SAUCERS?

By Frederic Booth

THOUGH the explanation will probably never be completely satisfactory to all people, the Nuclear Physics branch of the Naval Research Labs has released the so-called classified information that the "flying saucers" which figured so prominently in the news a year ago, were in reality radiosonde balloons for sounding the upper atmosphere. After all of the romance and excitement connected with them this prosaic explanation leaves you with that let-down feeling.

Nevertheless, it is a pretty well authenticated that the greater portion of the flying saucer reports were the results of enthusiastic, if not well-informed observers who saw what they wanted to see rather than what was actually there. The radiosonde explanation should have been clearly stated at the height of the excitement rather than now, but for some perverse reason, was kept in the top secret compartments.

Radiosonde research involves the probing of the atmosphere at high altitudes with hydrogen-filled balloons of very light material, quite large in size. These balloons

travel at speeds in excess of two hundred miles an hour driven by forceful blasts of wind and air currents. Because of their silvery sheen, it is easy to see why they were mistaken for the glamorized flying saucers.

Attached to the balloons by light cords are small boxes filled with temperature, pressure and radioactivity measuring devices along with a powerful battery-operated radio transmitter which continually monitors the instruments and relays that information back to receiving stations on Earth. It might be mentioned that the balloons attain altitudes considerably higher than any operational aircraft. That too is in keeping with the saucer reports. While it appears that this information will effectively answer the saucer reports, you may be sure that by no means have we heard the last of them. For years to come, there will be a steady trickle of saucer reports completely ignoring the facts and completely positive of the existence of the mysterious visitors. Oh, well, that's human nature!

ROMAN HOLIDAY

By

William P. McGivern



Caesar Simon waved in greeting to the crowds before he caught the ominous tone to the noise



His dream was to be a citizen of ancient Rome and throw his enemies to the lions. But he forgot to dress for the occasion!

CAESAR SIMON sat behind his clean, shining desk, and contemplated a picture on the wall of his office. It was a picture of the Roman Colosseum, and a good one. The artist had caught the feeling of splendid, brutal decadence that dominates the place.

Caesar liked the picture very much. He liked everything about old Rome. The language, the laws, the customs—ah, yes, the customs. He stared at the picture of the Colosseum, and wet his full, moist lips. The important men of Rome had known how to live. They

knew how to make life exciting. With a clap of scented hands they sent raging beasts out not only to attack men, but even soft, delightful females. With a turn of the thumb—up or down—they settled the fate of giant gladiators. That was the kind of power that quickened a man's pulse. Caesar stared at the picture, conscious of his quickened heart beat, but not alarmed by the sensation. It was rather pleasant, as a matter of fact.

The door opened and his secretary entered. Caesar glanced away from the picture and cleared his throat. He

knew he was blushing slightly.

"Yes, Miss Stevens?" he said, smiling.

"These letters are ready to sign," Miss Stevens said. "One is to the National Bank of Detroit, and the other is to the Local Security Company."

"Ah, of course."

He glanced through the letters quickly, his practised eye checking figures, facts, and dates with automatic efficiency. This was reality, he thought petulantly. The banking business, loans, bonds, securities, and the rest of its tiresome details. When a man might have had something else, have been born in another time... Something else: to sit in a high place wearing a jeweled toga and smile down at a terrified group of men and women, and listen to the roaring of the beasts set the stone floors to trembling....

He signed the letters quickly.

"Is there anything else, Mr. Simon?"

"Well, no." He handed the letters to her, holding them in such a manner that his plump hand brushed her fingers. She took the letters from him hastily.

"There is one thing, Miss Stevens," he said, smiling.

"Yes?"

Miss Stevens was an extremely attractive young woman. She was tall, excellently built, and her eyes were very blue and direct.

"I was wondering, that is, it occurred to me, if you would have dinner with me tonight," Caesar said. He didn't sound very optimistic, despite his smile. This was not the first time he had asked Miss Stevens to dinner.

"I'm sorry, Mr. Simon, but it just isn't possible," she said. She didn't sound very sorry, actually. Miss Stevens didn't like Caesar, and she heartily wished he would take her consistent

refusals of his invitations as an indication of her feelings. Miss Stevens didn't like the way Caesar looked at her, for one thing. If she leaned toward him—and he always sat deep in his chair to make her do this—his eyes always slid to a spot several inches below the base of her throat. If she bent to pick up a paper, or straightened her skirt, or checked the seams of her stockings, she'd always find Mr. Simon staring at her, his protruding eyes glinting brightly, his full lips moist and slightly parted. He never made a direct pass at her, but the dozens of casual, tactile contacts he engineered each day were infinitely worse. They made her feel a reluctant partner to some lecherous relationship that Mr. Simon was pursuing mentally. The idea that Mr. Simon *thought* about her intimately was enough to make her squirm.

"Some other lucky chap, eh?" Mr. Simon said with ponderous levity.

"No. I have other plans, though," Miss Stevens said.

CAESAR smiled gently, trying to appear casual and goodhumored, but inwardly he raged. Why did he tolerate her contempt? Why didn't he force her to recognize his power? He could fire her with a snap of his fingers. He could probably keep her from working again in this city. A word would do it: "Pleasant girl but, well, she's not the sort for a bank. You know, plenty of temptation there with loose money lying about...." That would do it, but Caesar knew in his heart he would never resort to this step. The thing was he wanted to see her every day, he wanted to know when he woke in the morning that he could hurry to work and find her at her desk, trim, efficient and lovely. He would put up with her contempt for that pleasure, unsatisfactory

and insubstantial though it was.

"Well, some other time then," he said.

Miss Stevens smiled briefly and started for the door. She stopped though, turned back, and said, "I forgot, Mr. Simon. There's a man waiting to see you. I told him he would need an appointment, but he insisted on staying."

"What's his business?"

Miss Stevens smiled, a genuine smile, and Caesar warmed to it. "He says he's invented a time machine," Miss Stevens said. "He needs a loan to build a full-scale model."

Caesar smiled, too, happy to share a joke with Miss Stevens. "Time machine, eh? Dear me. Please send him away as gently as possible."

"Yes, sir."

She turned to the door and Caesar glanced, automatically, unconsciously, to the picture of the Colosseum. He caught his breath sharply, as a thought struck him. Supposing...

"Miss Stevens!"

"Yes, sir."

"Send the man in, please," Caesar said. He colored under Miss Stevens' astonished expression. He laughed. "Might be fun to hear his story," he said.

"Of course, sir."

Caesar admired the backs of her slim straight legs as she left his office, and then he sighed and his momentary elation departed. He was behaving foolishly. Wasting his time.

The man who came in a few seconds later appeared surprisingly normal. He was in his fifties, had gray hair and alert, intelligent eyes, and was dressed conventionally in a blue business suit.

"Mr. Simon, my name is John Kirkpatrick," he said.

"Please sit down," Caesar said.

"Thank you. It's good of you to see me."

Caesar leaned back in his chair and studied Mr. Kirkpatrick with interest. "You've invented a time machine, I believe," he said.

"That's right. However, I need capital and—"

"We'll come to that in due time," Caesar said. "Let me hear about your machine first."

"Of course."

AN HOUR later Miss Stevens entered the office. Caesar sat alone at his desk, frowning thoughtfully at a picture on the wall.

"Mr. Kirkpatrick left his telephone number with me," she said. "Shall I keep it?"

"What? Oh. No, that won't be necessary. I have his address." Caesar blinked at her, hardly aware of what he had been saying. He cleared his throat and shifted some papers about on his desk. "The man's a crackpot, of course. Absolute crackpot."

That night at eight o'clock, Caesar sat in John Kirkpatrick's stuffy, poorly furnished room. He was breathing heavily. "Very well," he said. "Very well. You've convinced me. I'll advance you the necessary money."

Kirkpatrick sighed and ran a hand through his hair. "I frankly never thought I'd hear those words, Mr. Simon," he said, smiling. "You really mean you'll help me arrange a loan with your bank?"

"I will advance the money personally." Caesar had determined in his two talks with Kirkpatrick that the man was as guileless as a child about matters of finance. He was a genius, a pure and true genius in theoretical physics, but he didn't know the difference between a call loan and a check book.

"I'm really amazed at your confidence," Kirkpatrick said.

"There are some strings to it,"

Caesar said. "First, absolute secrecy. Do you agree to that?"

"Certainly."

"Two. When the machine is completed we will check it ourselves before making any announcement to the press."

"That's perfectly agreeable to me."

"Good. I will establish an account for you at the Merchants Bank tomorrow morning. I will deposit ten thousand dollars in your name."

"Then I can start, I can start," Kirkpatrick said exultantly. "No more models of glass, no more guessing and hoping. I can really start."

"When will you have the machine completed?"

"A month, perhaps two," Kirkpatrick said. He rose and began to pace the floor, seemingly unable to control his excitement and pleasure. "Mr. Simon, you really don't know the magnitude of your help. Not to me, of course. I'm nothing at all. But the whole world will be in your debt. We can travel to the future, learn their discoveries in medicine and science, and bring them back to our own time. We can travel in the past and right gross wrongs, by bringing with us the testimony that has come to light since the injustices were committed."

"Think of that! The Dreyfus case, Sacco and Vanzetti, the Salem burnings—all of those events may be re-enacted and reassessed with new knowledge, new evidence." He stopped before Caesar Simon, who was staring up at him with a small, careful smile on his round blank face. "You can hardly believe it, I know," Kirkpatrick said. "But there is no limit to the good my machine can do. Think of the horror and cruelty of the past. The Roman gladiatorial games, the senseless persecution of religious minorities. We can change all that now. We can go back and show those people their

mistakes, their sins against God and Humanity."

"Oh, yes, we can go back there," Caesar Simon said, and there was still the small, careful smile on his face. He stood up and reached for his hat. "That will be most...ah...interesting. Good night, Mr. Kirkpatrick. Stop by at my office...." Caesar paused. "No, I'll meet you at the Merchants Bank, on second thought. Ten o'clock sharp."

CAESAR returned to his routine at the bank, but beneath his serene exterior there was a drumming, almost unbearable excitement. Each Saturday morning he took a train out to the small laboratory Kirkpatrick had rented in the country. There he stared at plans, metals, instruments and precision tools, with a small, careful smile. He watched the machine take form, grow into an oddly fluid, shimmering metal globe. Kirkpatrick worked like a slave, sleeping on his desk in snatches of an hour or so, and then returning to his drawing boards and laths, pale, tired, but burning with an unquenchable spirit and energy.

The days and weeks went by, and Caesar controlled his excitement under a mask of calm serenity. He was working, too, like a slave, making plans, rejecting them, making still more, and always testing each new addition to his ultimate structure with ruthless criticism. He had stopped asking Miss Stevens to dinner—that was part of the master plan—and their relationship had consequently improved. Also, he gave up, regretfully, the little tactile contacts with her which he had enjoyed so much, and struggled hard to keep from staring at her legs when she took his dictation.

He treated her like part of the office furniture, and Miss Stevens was very grateful. She began to feel ha

wasn't actually too bad; and when he arranged a raise for her she actually felt a stir of warmth for him. After all, she thought, he was a lonely man, and needed companionship. But she was relieved that he had apparently decided to look to someone else for it.

There were other elements in Caesar's plans that were more difficult to arrange. However, he wasn't discouraged; he plugged away, thinking hard, knowing he would eventually figure everything out perfectly. There was no need to hurry until the time machine was tested. If it worked, then he would find a way.

One afternoon, five minutes before the bank closed, Caesar went out to Miss Stevens' desk. He carried several letters in his hand.

"I'm terribly sorry, Miss Stevens, but these have to be done tonight," he said.

"Oh, that's all right. I can have them done in an hour or so." She smiled at him, because he seemed genuinely disturbed.

"Thank you. I don't like to ask people to work at the last minute, you know." He frowned slightly. "I'm meeting one of our depositors at the Reale Hotel, and I need those letters. Would you mind dropping them off for me there? I'll be in the lobby."

"Why, yes, of course," Miss Stevens said. She was slightly surprised; this had never happened before.

"Thank you, very much," Caesar said, smiling with relief. It had worked perfectly, he was thinking. "I'll expect you to take a cab, of course, and reimburse yourself from the petty cash. Thank you again, Miss Stevens. Good night."

MISS STEVENS glanced at the letters and sighed. An extra hour or two of work at the end of the day

was never a pleasant prospect. Still, it wasn't the customary thing here. She slipped paper into the typewriter and got busy...

Ten minutes later the door of her office opened and a tall young man stuck his head in. He had a lean, solemn face, and rather disorderly black hair. "My, my," he murmured, regarding her with raised eyebrows. "Such industry. Are you hoping to become a vice-president of this honorable dump, or do you just like to type?"

"I love typing. I get up in the middle of the night to type," Kay Stevens said shortly. She continued her work with a great clatter. She knew the young man in the doorway was Al Marshall, the assistant cashier of the bank. He was considered very swoon-some by practically every female in the place. This irritated Miss Stevens, who thought he was affected and conceited. Still, she conceded, he would probably be attractive to women who liked the casual, humorous type.

"Now that's a pity," he said, strolling over to her side. "I hate the thought of a pretty girl being so bored in bed that she is forced to get up and type. It's a great waste, don't you think?"

"I am never bored in bed," Miss Stevens said.

"Well, fine," Marshall said with a wide smile. Miss Stevens began to flush. "I put you down as the modern, adjusted type right away," he said.

"Don't bother putting me down, up, or anywhere, for that matter," Miss Stevens said.

"Now, now, let's don't be cross," Marshall said. "I was only trying to be funny, which is something bank cashiers should try to avoid. Sorry."

He seemed to mean it, she thought. Actually, at the moment, he seemed rather nice. "Please don't worry about

it," she said, feeling equally contrite.

"Good. Tell you what. How about having a cocktail with me?"

"I—I'm sorry. I've got this work to finish."

"I'll wait."

"I'm afraid that won't do much good," she said. She was looking up at him now and smiling. He was easy to talk to, she realized. "I've got to take these letters to Mr. Simon's hotel when I finish them."

"Oh, I see." He rubbed his jaw. "For some reason I find that a disquieting idea."

Miss Stevens was annoyed now, at herself for putting the matter so ambiguously, at him for leaping so instantly to the least charitable conclusion. "I don't think it concerns you," she said.

He was still rubbing his jaw. "I don't like the way he looks at you," he said. "You know, he's like a toad. A big fat toad sitting on a lily pad and blinking his eyes at a little butterfly."

"You have the soul of a poet," Miss Stevens said with heavy sarcasm. "But Mr. Simon is all right as far as I'm concerned."

"Oh, obviously," Marshall said. He looked down at her for an instant and then walked out of the office.

"Damn!" Miss Stevens said when the door closed. She was furious at him. And a little unhappy...

THE DAY of the test arrived, and Caesar stood beside the shimmering time machine with damp palms, and a strangely thudding heart. If only it worked, if only it worked, he kept thinking, and his fat moist lips moved with the words as if he were repeating a silent prayer.

"Now we're all set," Kirkpatrick said crisply. "We'll go back one hundred years, to a wooded area outside of

New York. We won't be observed there when we make the transition. I've checked the coordinates on a large-scale map of the section and made the settings on the machine. Are you ready?"

Caesar rubbed his damp hands on his trouser legs. "Yes, yes, of course, I'm ready," he said.

They entered the shining globe and took seats on a ledge that circled the interior of the machine. Kirkpatrick made an adjustment on the instrument panel, glanced at his watch, and then moved an aluminum lever slowly along a calibrated bar. "Well, here we go," he said. "Pray hard, Mr. Simon."

Caesar prayed, not to God, but to something, *anything*, that would help his plans to become reality.

The machine began to throb slightly, and a keen, insistent humming grew in their ears. In a voice that was almost hoarse with excitement, Kirkpatrick cried, "We're going, we're on our way!"

It had worked, it *had* worked, Caesar said over and over again to himself later that night. He was too nervous and excited to sleep. Pacing the floor of his apartment, his big fat hands opening and closing spasmodically, he clutched that shining, glorious thought to his secret heart: *It had worked!* He and Kirkpatrick had traveled one hundred years into the past, had seen the brawling, crowded city of New York, with its muddy streets, horse-and-carriage transportation, and its side-whiskered inhabitants.

The rest of his plan *must* succeed. Caesar had no interest in Kirkpatrick's philanthropic taradiddle. He didn't care one damn about improving the state of the world, righting wrongs, or any of the rest of Kirkpatrick's do-gooding nonsense. Caesar was interested in himself, only, and in satisfying his strange but powerful urges.

Caesar was going back to ancient Rome.

He was going to spend his life there, as one of that old capital's important, respected men, and he would sit in the Colosseum, himself, and listen to the roar of the animals penned beneath the colossal structure, and smile down at the terrified humans who awaited their savage, snarling entrance.

FINALLY, he forced himself to sit down and consider his plans. Time was important. Kirkpatrick was desperately eager to announce his epochal invention to the world. There would be no announcement, of course; that would be ruinous to Caesar's plans. But he had to stall Kirkpatrick, convince him of the necessity to remain silent, until his own plans were completed.

Money—that was the snag.

Everywhere, in every time, money was the single essential commodity. It was the symbol of power, of respect, of importance. Therefore, and he had known this all the time, of course, he must have money. Not dollars; they would be worthless in old Rome. But gold! Gold was what he needed. Gold would buy him everything he wanted; friends, power, a seat in the Colosseum.

There was gold in the vaults of the bank, Caesar knew. Bars of it, hundreds of pounds of it, awaiting transfer to Fort Knox. But for the life of him he couldn't figure out a way to get his hands on it. As an officer of the bank he could enter the vaults easily enough, even after regular banking hours. But he couldn't take it out, without running squarely into the vault guards. He had rejected a dozen schemes. Even he, an officer of the bank, couldn't take a large valise or suitcase into the vault and

carry it out bulging with gold. He had thought of boldly killing the guards, but that might not be as easy as it sounded. They were armed. He might shoot one of them, but the others would be alerted then, would be pressing alarm buttons, firing at him.

Also, there was the problem of getting out of the bank, even if he did kill the guards, and of eluding the police net that would be thrown instantly about the area.

He saw no way of getting the time machine *into* the bank, and thence into the vaults. If he could manage that, of course, his problems would be solved. He would have only to load the machine with gold and send himself into the past. But how could he get the machine into the vault? He had thought of crating it and having it delivered to the bank as some sort of a new comptometer, but that was childishly inept. There would be questions, curiosity, people who wanted to inspect it, who would want to know why a comptometer was needed in the vaults.

WEARILY, Caesar rubbed his forehead. Then he went to his desk and took a large-scale map of the bank's immediate neighborhood from the drawer and settled down to study it. He had done this innumerable times before, it seemed, without ever getting any closer to a solution of his problem. He pored over the map, frowning unhappily, peering at the buildings which adjoined the bank, and remembering what he had made a point of learning about the tunnels beneath the bank and the offices on the floors above the vaults. He saw no solution. The vault was at the center of the web of tunnels, corridors, and offices, but it was closely guarded at every possible approach. Caesar began to feel like a

rat in a maze. At every turn he ran into a blank, impenetrable wall.

To get the gold—that was the only flaw.

Everything else was set. Caesar had majored in Latin in college, a result of the same whim on his father's part which had bestowed on him the name of Caesar. In the past six weeks he had spent his spare time poring over ancient texts, familiarizing himself with the idiom spoken in early Roman times, and studying the mores of the period. He had chosen the middle of the Fourth Century, A.D., as the time in which he would live out the rest of his life.

That was the flower of Rome's place in history. The Christian persecutions had ended, but the nobility of Rome lived lives of sybaritic delight. There were the gladiatorial games, the slaughters in the Colosseum—not of Christians, but of law-breakers, fomenters of revolt, and so forth—and the baths, slave girls, splendid villas.

To restore some of his optimism, Caesar went into his bedroom and opened up his closets. There hung a friar's robe of coarse brown wool. With it was a chain of rosary beads, made of heavy wood, and a pair of cheap leather sandals. Caesar had picked up the outfit in a religious supply store, and had told the clerk blandly that he was buying it for his brother, a missionary in China.

With this outfit, he would make his entrance into the life of Rome. A poor, wandering priest, mumbling his beads, begging a bit of food and a bowl of water from the wealthy homes, he would accustom himself to the *milieu* of the city, learn what men were powerful, which could be bought, and then, only then, he would convert his gold into power. He would be a man of mystery, a humble, ignorant

priest who slowly, imperceptibly, advanced himself into the councils of the mightiest men of Rome. It would be a challenge to his intelligence, to his superior knowledge of history, and it would also be gratifying to his buried need for intrigue and deception.

Caesar sighed, studying his disguise. Everything was so close to hand that he literally trembled with excitement. Only the money was needed. . .

The next day he ignored his work at the bank completely, and sat in almost a coma at his desk, worrying his mind desperately for the solution to his problem. Miss Stevens came in and out of his office on routine errands, but he barely glanced at her. The president of the bank stopped by to ask him to lunch, but Caesar begged off with a vague excuse. The president went off frowning. He wanted to speak to Caesar about a certain laxity he had noticed in his work, but the man was obviously too wrapped up in some personal problem to care. Well, a change might be necessary.

SUDDENLY, Caesar struck his forehead with his hand. He had it! It had come to him from the blue, all in one piece, the perfect scheme to get at the gold and, more important, to get away with it. Rising, he began pacing the floor, feeling an invigorating sense of confidence sweep through his veins. Now the plan was complete! He could put it into effect tonight!

He glanced at his watch. Five o'clock. Plenty of time to make his last-minute preparations. He was still pacing, turning his plan this way and that with nimble mental fingers, when the door opened and Miss Stevens came in.

"I'm running along now," she said. "Was there anything else you wanted, Mr. Simon?"

Caesar was recalled to the reality of the present. "No, I don't think so, Miss Stevens," he said. She had never looked more lovely to him, he thought. He sighed and wet his lips. This was the last time he would see her, the last time his heart would lurch unsteadily when she came into his office, the last time his body would burn with strange dark desire in her presence. She was wearing a black suit with a rhinestone clip on the collar, and a single strand of pearls about her throat. She stood in the doorway, slim, confident, infinitely desirable, a stray beam of sunlight glinting in her long dark hair.

"Good night, then," she said, and smiled.

He could not let her go. "Just one minute, please," he said.

"Yes?"

No, he couldn't let her go! "I'm terribly sorry, Miss Stevens, but I just remembered something," he said. "Could you stay tonight and do a small job for me? I—I'll make it up to you next week. You may have a whole day off."

"Oh, that's all right, Mr. Simon," she said. She smiled philosophically. "What is it?"

Caesar felt rather giddy. This wasn't part of the plan. He wasn't prepared. Not now! Once, at the beginning of his dream, he had thought of taking her with him, by force, if necessary. That was why he had asked her to stay and work one night, and to deliver the letters to the hotel. He had planned to make this a customary thing, once every couple of weeks perhaps, so that any suspicions she might entertain would be lulled. Then, when everything else was ready, he would ask her to bring some work to his apartment—or to the factory in the country. She would do it, of course, suspecting nothing, and then

he would make her come with him, back to the ancient evil glory of Rome. That had been the dream. But he had scrapped it. It was too uncertain, too risky. But now, seeing her like this, and knowing it would be for the last time, he threw caution to the winds. He *would* take her with him, back to Rome.

"Ah, yes, here it is," he said, going to his desk and picking up a sheaf of unimportant figures. "I need a copy of these by tonight. It's—it's very important. I'm going to meet some people in my apartment, and I've promised them a set of these figures." He glanced at her, forcing a casual smile to his face. "Could you bring them up yourself? It would save a great deal of time."

"Why, yes, yes, of course," Miss Stevens said. She was slightly perplexed by his manner. He seemed strained and excited. For an instant she wondered if she were being wise. And then she laughed at herself. She was no child. And this was the twentieth century. A firm "No!" was a girl's best defense.

"Thank you, thank you so much," Caesar said, breathing rapidly. "Now, I must be going. I'll expect you around seven. Can you have the copies made by then?"

"Yes, I think so."

"Good." Caesar picked up his hat, smiled at her, and hurried from the office....

KAY WENT out to her desk and began the work. She had been clattering away for perhaps ten minutes when the outer door opened, and Al Marshall strolled in, looking casual and handsome in a well-worn tweed suit.

"Say, you do like to type," he murmured, perching on the edge of her desk.

They hadn't spoken since their last encounter, and had only nodded rather ceremoniously to each other when they happened to meet in the building.

"We seem to have been through this once before," she said. Her tone was friendly enough; she would meet him half-way, she decided, if he made any conciliatory overtures.

"Well, let's run through the whole script then," he said, smiling. "The last time I asked you to have a drink with me. Now, right on cue, I'll try again: How about having a drink with me tonight?"

Kay shrugged helplessly. "The script hasn't changed," she said. "I've got this work to turn out for Mr. Simon tonight."

"I see," he said. He wasn't smiling any more. "Delivering it to his hotel, I presume?"

"I didn't take it to *his* hotel," she said exasperatedly. "I took it to a hotel where he was meeting someone. I gave it to him in the lobby and took a chaste streetcar to my apartment."

"And you're taking this work to a hotel, also?"

She hesitated. "No, I'm taking it to his apartment," she said.

"I'll say the script hasn't changed," he said. He looked puzzled and angry. "Aren't you afraid of not getting it by the Hays Office?"

"Oh, stop it!" she said. "It's my business, and my life. What right have you to presume that I'm steeped in sin because I deliver some work to Mr. Simon's apartment?"

"Because I don't like him," Marshall said.

"You've got a fixation about him. He's no wolf, for Heaven's sake."

"I'd be happier if he were. He's something else, something I can't describe, but it's unpleasant and frightening I wish to hell you'd stop

this seeing him after hours."

"I *don't* see him," Kay cried. "You're building this in your imagination. What difference does it make to you, anyway?"

Marshall rubbed his chin, and for an instant he seemed unsure of himself, and vulnerable. Then he shrugged, and said casually, "It doesn't make any difference to me, of course. See you around."

He nodded and walked out of the office.

Kay stared after his tall figure, then went back to her work. The first time, she thought, he made me angry and unhappy. This time it was different. She wasn't angry at all; she was just unhappy.

CAESAR was pacing the floor of his living room when the front doorbell rang. He hurried to the door and opened it.

"Ah, come in Miss Stevens," he said. "You're earlier than I expected."

Kay handed him the neatly typed copies of the figures. "It wasn't too hard a job," she said. "I'm glad I made it here on time."

"You did, with time to spare. Please come in a moment, won't you?"

"I really think I'd better run along."

"Now, I won't hear of that." Caesar forced a bluff, avuncular tone into his voice. "I'm going to give you a cup of tea, at least. You've been perfectly grand about doing this extra work." He glanced at his watch. "My friends won't be here for five or ten minutes. Please come in."

"All right." She smiled at him and entered the living room. It seemed important to him, she thought, and she didn't want to appear rude. She glanced around with interest. There were pictures of the Roman Colosseum

on the walls, and other pictures of the Forum, the baths of Nero, and prints of early Roman scenes. The mantle and tables were adorned with fragments of ancient sculpture, green, misshapen and, Miss Stevens thought, rather ugly mementoes of the period.

"You're interested in Roman culture?" she said.

"Yes, it's a minor hobby of mine." He smiled. "Here, please sit down. When your parents call you Caesar, as mine did with me, you're just about forced to become a Latin scholar. Not that I'm a scholar, by any means," he added, still smiling. "Just an amateur, a pure amateur."

Miss Stevens sat down, crossing her legs. Caesar bustled about bringing her a cup of tea. He took a glass of sherry for himself, and sat down facing her, conscious of the sudden drumming of his heart. Calmly, calmly, he told himself. Everything you've wanted is within reach.

"Now, Miss Stevens," he began, but no other words occurred to him, and he stared at her with his mouth hanging open.

"Yes?" she said.

"Well..." He coughed and took a small sip of his drink. Then he plunged on, his voice nearly strangled with anxiety. "You've always thought of me as an ordinary man, I daresay, Miss Stevens. And quite rightly. I was an ordinary man. You thought that I was an ordinary man, didn't you?"

"I never thought very much about it one way or the other, to be truthful," Miss Stevens said. She was at a loss for anything else to say. He was looking at her so oddly, so beseechingly, that she felt sorry for him. "After all, I'm just your secretary."

"Well, it doesn't matter," Caesar said, waving his hand vaguely in the air. "I was an ordinary man, Miss

Stevens. But I am not any longer."

"No?"

"No." He leaned toward her breathing hard. "Do you remember the man who came in seven weeks ago with the absurd story of having invented a time machine?"

"Yes, I remember. Why?"

Caesar lowered his voice impressively. "That man *did* invent a time machine, Miss Stevens. I backed him financially, and the project is a success. We have already tested it." He swelled his chest. "I went a hundred years into the past last week. To the New York of one hundred years ago."

Kay smiled doubtfully. "How nice," she murmured.

"You think I'm imagining things, eh?" He laughed at her feeble denials. "I don't blame you, my dear. It sounds incredible, of course. But the simple fact is that a time machine does exist. It is mine, to do with as I please."

Miss Stevens glanced hastily at her watch. "Really, I think I'd better be running along."

"But I haven't finished."

"I know, but it's rather late. I've had no dinner, you see—"

"This will take only a few more minutes. Do you wonder what I am going to do with my time machine?"

"Well, naturally, I'm curious," she said, straight-faced.

"**I** AM RETURNING to ancient Rome," Caesar said, and with the words he stood erect and threw his arms wide in a joyous, triumphant gesture. "To Rome, the city that has always been the home of my soul. I have longed through all my dreary life to know her better, to feel her dark, cruel pulse beating in tune with my own, but always my dreams were mocked by the immense, unknowable barrier of time. But we have crossed

that barrier," Miss Stevens, and ahead of me I can see Rome shining in glory, waiting for me to call her my home, my very soul."

Miss Stevens laughed. "You're very poetic about it, Mr. Simon. I suppose it would be fun to travel through time, at that."

"But *I can*," Caesar said hoarsely. "I can travel through time."

"Really, Mr. Simon, you're carrying your gag a little far, I think."

"It is no gag," Caesar said. Suddenly, unaware of what he was doing, he sank to his knees at her feet. "I want you to come with me, my love, I beg you to come with me. Together we will live as a king and queen in that glorious city."

"You're being ridiculous, Mr. Simon," Kay said, in a sharp, unamused voice.

"No, I'm not! You must believe! We can go to Rome, you and I, and live there in unimaginable splendor. The brightest jewels and fabrics of the East will adorn your body. Slaves will attend your every wish. We will have power, immense power, and life will be one constant succession of passion and fulfillment."

Kay struggled to her feet, forcing him aside. "Goodby, Mr. Simon," she said, and started for the door. He scrambled up and caught her arm. "You must listen," he cried. He knew he was being mad. He should never have talked this way to her, he had frightened her, scared her away. But he couldn't stop. The words poured out of him in a rush. "I have money, gold, more of it than you've ever dreamed existed. It's in the bank's vaults now, but I will take it back into time with me in the machine. You can share it with me, you can have it all, my love."

"You're insane, Mr. Simon," Kay said. "Please let go my arm."

Caesar saw the contempt and disgust in her face, heard it in her low, even voice. He knew then that his dream had been mad. She despised him, thought him a babbling, silly, repulsive old man. He began to tremble with rage. She would not dare look at him this way if he were a Roman nobleman. He would order her to the stake, or to the pit of the Colosseum, and he would smile down at her screams as the lions roared into the arena.

Cunning replaced his anger. "I am sorry to have startled you, Miss Stevens," he said, in a voice that he tried to make normal. "It was just a little joke of mine."

"I didn't find it amusing," Kay said stiffly. "Goodby, Mr. Simon."

"Goodby," he said, and released her arm.

She turned to the door, turned her back to him, and his hands, feverish with need, shot out and fastened about her throat.

Caesar dragged her limp body into his bedroom. He was breathing very hard, and there was a curious insistent drumbeat in his temples. His head was light and dizzy, but he felt supremely confident.

EVERYTHING would work out all right. He would come back for her in the time machine. That was how he planned to get the gold. A trip back through one hour, just one hour, would put him in the vaults of the bank. Instead of crashing in, or sneaking in, he would come in on the broad but invisible road of time. Then, after he had collected the gold, he would make another trip to his apartment—going back another hour into time. He would load Kay Stevens into the machine and depart for the past, secure from any retribution, and facing a future of power and luxury.

Then he would tame her, he thought, breathing heavily. Then she would learn to conceal that expression of contempt. She would learn the meaning of humility; she would learn to please her lord.

He stretched her out on his bed, and put a hand towel across her mouth. From the bathroom he got a roll of broad adhesive tape, and with strips of it fastened the towel securely across her mouth. Not too tightly, he reminded himself. He didn't want her to suffocate. Then he bound her wrists behind her back and taped her ankles together. Thoughtfully, and with a smile at his own thoroughness, he removed her open-toed sandals. No chance of her raising a racket with her heels against the bedstead now. He was about to secure her feet to the foot of the bed, when something happened which caused his heart to make an agonized, convulsive leap against his ribs.

A knock sounded on the door of his apartment. "No, no," he whispered.

The knock was repeated loudly, and a hand rattled the doorknob.

Caesar wet his lips, and glared around the room like a frightened rabbit. "No, no," he said again, wringing his fat hands together piteously. Go away, go away, he implored the nameless door-knocker.

But the knocks came again, resolute and angry.

Caesar got hold of himself with an effort. He must answer the door. The manager of the building knew he was in, and if inquiries were started he would come up with a passkey.

Caesar picked up his secretary's limp and helpless body and staggered across to the closet. He held her with one arm while he got the door open, then pushed her in and eased her down to the floor. Breathing jerkily

from this exertion, he closed the door, ran his hands over his disordered hair, and hurried into the living room to answer the door.

Al Marshall stood in the hallway, a stern, no-nonsense look on his face.

"I came by to pick up Miss Stevens," he said.

"Well, well," Caesar said. He smiled and blinked his eyes. What did this mean? Al Marshall, the assistant cashier of the bank, and Miss Stevens? A little interoffice romance, eh?

"I'm sorry, but she's gone," he said.

"Isn't that her purse on the floor?" Marshall said, staring past Caesar, and at the floor.

Caesar turned, fighting down a giddy impulse to begin giggling. Yes, it was her purse, all right, dropped there when he had caught her throat in his hands. "Why, so it is," he murmured. "Perhaps you'd be good enough to take it along with you," he said. "That is, if you're seeing her tonight, you could give it to her."

MARSHALL pushed past him and strolled into the room. "I've got a funny idea there's something screwy here," he said. He glanced at Caesar. "Supposing you convince me I'm wrong."

Caesar smiled weakly. "I'm sure I don't know what you're talking about."

"I'm going to take a look around," Marshall said. "Girls don't leave their purses in the middle of the floor as a rule."

"Well, supposing you try the bedroom first," Caesar said. The cunning came back to him, and he smiled. "That's where old ogres like me usually imprison lovely females, isn't it?"

Marshall started for the bedroom. Caesar picked up a large marble ash-

tray and followed him, chattering casually. "You'd better try the closets too, of course," he said. "And the bathroom. I might have hidden her in the shower stall, you know."

Marshall stopped inside the bedroom, hands on his hips. Caesar stepped up behind him, and raised the ashtray high above his head.

Panic swept through him as he stared down at Marshall's limp body, and watched the blood flowing from the contusion at the base of his skull. Now he had done it! His time table was destroyed! When Marshall came around he'd phone the police, discover Miss Stevens. She'd tell him what she knew of the time machine, the planned theft of the bank's gold. The police might be on him before he could escape into the past.

He must flee. Everything else was unimportant. He must leave Miss Stevens. Nothing could stop him now from his flight to ancient Rome. That was the great dream, and it must be lived.

He tore open the door of the closet and jerked down the friar's robe, his disguise for old Rome.

HALF AN HOUR later he was hammering on the door of Kirkpatrick's room. Kirkpatrick opened the door and stared at him in bewilderment.

"What's the devil's wrong?" he said.

"Not a moment to lose," Caesar panted. "There's a plot to destroy the time machine. Vicious men—news got out—they're after it. We must hide it away. Hurry, man!"

Kirkpatrick jumped for his coat. "Let's go," he said.

They took a cab out to the factory. "For God's sake give me the details," Kirkpatrick said. "What's the idea of your wearing a priest's robe?"

"I'll explain everything when the machine is safe," Caesar told him.

Inside the factory Caesar gave his orders. He told Kirkpatrick to set the machine for the coordinates of the bank vaults, one hour into the past. The coordinates were meaningless to Kirkpatrick; he did as he was told, quickly, efficiently, and both men clambered into the machine.

Caesar asked one question: "Supposing we wanted to return to the year 350 A.D., in the vicinity of old Rome. What settings would we use?"

Kirkpatrick showed him, and Caesar nodded. "Let's go, let's go," he said nervously.

The machine shimmered, the humming noise began. They slipped through time.

Caesar was first out of the machine. He knew from the stone under his feet, from the smell of money in his nose, that they were in the vault of the bank.

"Just where are we?" Kirkpatrick asked.

Caesar moved confidently through the darkness and flipped on the wall switch. Light flooded the thickly walled room. Records were stacked in shelves all the way to the ceiling. Bags of coin and sheafs of currency were on the floor. And in one corner were gleaming bars of gold.

"Give me a hand," Caesar said. "We're going to load up with gold."

"Hey, just a minute," Kirkpatrick said slowly.

But Caesar had already picked up two bars of gold and was carting them into the machine. With his back to Kirkpatrick he changed the settings on the instrument panel. Now he was ready for his ultimate destination: the fourth century, Rome!

"What's all this about?" Kirkpatrick said. He was frowning. "I don't like it a bit, Mr. Simon. Sup-

posing you tell me all about this plot you've unearthed."

"No time now," Caesar said, ducking out of the machine and returning with more gold.

WHEN HE stepped out this time, however, Kirkpatrick was blocking his way. "We'll talk now," Kirkpatrick said. "I'm not quite the simpleton you obviously take me for. I have an idea what's going on in that banker's mind of yours."

Caesar found a reserve of strength and calmness somewhere in his roiling soul. He looked down at Kirkpatrick, said blandly, "What do you mean?"

They faced each other across an instant of silence, the priest-robed banker and the lean, intense scientist, faced each other in the dimly-lighted vault.

"You're planning robbery," Kirkpatrick said at last. "You think we can escape to old Rome with this gold. That's why you're wearing that priest's robe, isn't it? And the rosary and crucifix. All part of the disguise."

"You're essentially correct," Caesar said coolly. "One detail was wrong, however. I'm not taking you with me, you see."

"What do you mean? Do you think I'd be a partner to this madness?" Kirkpatrick stared at him angrily. "This machine is for the benefit of all humanity, not for the glorification of one depraved, selfish madman. Yes, you're mad, Simon. Absolutely mad."

"So, they tell me, was Nero," Caesar said, with a little laugh.

"I'm not going to let you get away with it," Kirkpatrick cried. "You aren't going to take my machine for your own selfish reasons. It stays here, Simon."

"Again, you're incorrect," Caesar said, and lunged at the smaller man.

Kirkpatrick dodged away from him and ran to the time machine. Caesar caught him in the doorway, and got a beefy forearm under his chin. Kirkpatrick was trying to get hold of the startling lever of the machine. His hands fluttered desperately toward the instrument panel. They struggled for a moment, locked in a silence broken only by their ragged breathing, and then Caesar flung himself backward and pulled the scientist away from the machine. Holding him with one arm, he fumbled for the rosary, grasped the heavy crucifix, and raised it over his head. Grinning wildly, he brought it down again and again on the back of Kirkpatrick's skull.

Panting, Caesar completed the loading of the time machine. Kirkpatrick lay motionless on the floor, dead. Caesar had no feeling for him—no more feeling than he'd have for a log lying in a forest. Finally, his job was done. He scrambled into the machine and closed the door. With a sob of anticipation and relief he threw the starting lever into place.

AL MARSHALL sat on the bed in Caesar's apartment speaking into the phone. Beside him, Kay Stevens rested her head on his shoulder, and tried with fair success not to cry. She didn't care about her cramped muscles, the tape gum on her nylons, or her bruised lips. What hurt her was the angry bump on Marshall's head....

"Thanks, Sergeant," Marshall said at last. "I think you'd better get after him fast."

"We will, and thanks for calling."

Marshall put down the phone and smiled at Kay. "Well, that's that," he said.

"He must be insane," she said.

"Yes, that's about the kindest explanation."

"He's caused nothing but trouble."

"Oh, I don't know about that," Marshall said, putting a hand under her chin and tipping her face up. "He got us together, at any rate. That's not going to cause any trouble, as I see it."

"No, I don't suppose so," Kay said in a meek and happy voice.

"How about dinner?"

"I'd love it."

CAESAR stepped out of the time machine into warm, moon-lit darkness. He breathed deeply, stifling a mad urge to scream with delight. He was *here!* Rome! The air, soft with the scent of grapes, told him that with certainty. But an even surer sign was the vast incredible bulk of the Colosseum rising blackly before the moon-lighted sky. Yes, he was in Rome! Life was starting for him now, a life of giddy, mad pleasure.

But first there was work....

Caesar had landed in a small grove of olive trees, silver-gray now in the pale moonlight. He made a careful reconnoiter, circling the small growth of woods, and carefully examining the surrounding area. He had seen the Colosseum through a break in the trees; now, after completing his circuit, he decided that he was just about three miles from the main bulk of the city of Rome. There were farming grounds about the trees and, on the edge of them, a rutted road leading toward the city.

Caesar returned to the time machine almost groggy with pleasure. His past slipped away from him imperceptibly. He was in Rome, of Rome, now, and his old existence, his work at the bank, his need for Miss Stevens, his relationship with Kirkpatrick, were all fading from his mind, as inevitably as if they were the figments of a dream.

Pleasantly warm from his exercise, he unloaded the gold from the machine, then stored most of it in a shallow hole he dug with his hands. He marked the spot by stripping bark from four trees which boxed the hiding place of the gold. Next week or next month he could return and remove the gold to a safe hiding place. He kept only two bars of it now, and these he hid away in the folds of his cowl.

Tired and pleased, Caesar stretched out on the ground to rest. Above him stars glittered in the loose velvet folds of the sky, and in the trees a bird was singing. He sighed and closed his eyes. He slept....

The first light of dawn awakened him. He rose, eager to begin the rest of his work. First, he set the instruments of the time machine to the deep past, millions of years, B.C., and sent it shimmering away toward that lost, bleak birthplace of the Universe. He chuckled as the machine throbbed, shimmered, and finally disappeared. Let some wandering sub-human savage make what he would of it! Let him fly at it with a spear, or leap on it with a stone axe, and smash its delicate mechanism to pieces! He was through with it! He had found his time, the perfect time, and he longed for nothing else.

WITH A LAST glance about him, Caesar slung his gold-laden cowl over his shoulder and set forth on his trip to Rome. It was a beautiful pearl-gray morning, warm and fragrant, with dew glistening on the shrubs and flowers that grew along the road. Caesar found it difficult to keep his face from mirroring the excitement and pleasure that throbbed within him. But that would never do, he reproved himself. He was a man of God, a humble servant of the Lord,

and so he pulled down the corners of his mouth, put a profound frown on his forehead, and moved his lips as if he were praying. Thus, bent slightly under his load of gold, he hobbled along, frowning, preoccupied, and removed from the cares of the world. But, underneath that saintly facade, a high, giddy laugh beat soundlessly against the walls of his mind.

After walking for ten minutes Caesar encountered two raggedly dressed peasants. He saluted them gravely, and raised his hand in a blessing.

"*In Nomine Patris*—" he began, but the peasants, after one startled look, hurried past him and broke into a run.

Caesar stared after them, puzzled. What was the matter? Stupid bucolic idiots, he thought. Probably something on their consciences. A jug too much of wine last night, or some flirtation with a neighbor's wife.

Ahead of him he heard the drumming beat of horses, and wheels striking the road with the sound of iron. He plodded on, smoothing the perplexity from his round bland face.

The sound grew in volume. Round a bend swept two chariots pulled by teams of spirited horses. There were soldiers in the chariots, rough, brutal-looking men in armor and metal head-dresses. They reined their horses to a stop, and leaped to the ground when they saw Caesar.

He raised a hand in gentle greeting and put a soft smile on his lips.

"*In Nomine Patris*—"

A mailed fist struck him on the side of the face, and he went sprawling into the dust.

"Christian dog!" a voice bawled.

Caesar gasped as a metal-shod foot thudded into his ribs.

"You have the insolence to show yourself in the light, eh?" another voice cried.

"In the name of God, I am but a poor priest!" Caesar cried out, almost mad with anxiety.

Strong hands caught his arms, jerked him to his feet. His gold-laden cowl banged with a metallic crash against one of the soldiers' breast place.

"What have we here?" a voice thundered.

Cloth ripped, and the golden bars clattered to the dusty road.

"Poor priest indeed!" the four soldiers cried in chorus, and they began to laugh. One of them drew back his fist. Caesar cringed, tried to break away, but the fist flew at him, crashed into his jaw with sickening force.

Another hand was on his shoulder, a gentle, soft hand.

"You must be strong," a voice whispered.

Caesar raised his head slowly. There was a vast roaring in his ears. His jaw ached terribly.

"You must pray to our Savior for strength!" the voice said. "Come, raise your voice with mine. Oh Almighty God..."

THERE WAS dust in his face, in his nostrils, and everywhere was noise. It beat in on him from all sides, a gay, roaring babble of sound.

He opened his eyes and began to shake. Around him, above him, on all sides, faces peered down at him. Laughing faces, mocking faces, cruel faces, the inside of a massive arch. It was as if he lay imprisoned in walls made of human flesh, adorned and frescoed by grinning faces.

Caesar staggered to his feet and began to scream.

Hands pulled him to the earth. He was surrounded by a small group of calm, gentle men and women. "There is nothing to fear," one of them said.

"Good Friar, Our Savior will protect us!"

"I am a Christian!" Caesar screamed.

"We are all Christians. That is why we are here."

"But they do not kill Christians now," Caesar shouted. He struggled to his feet, and screamed at the crowd: "I am a Christian!" Their screams mocked his own, and a woman, a pretty woman, spat down into his face.

"Yes, they kill Christians," the voice of one of the men said. "Since His death seventeen years ago, the rage of these god-haters has been unslakeable. We must pray for them...."

Caesar sank limply to his knees, and a flick of saliva appeared on his loose, slack lips. "No...no," he said, in a voice under which trembled a high, mad laugh.

Seventeen years... This was Fifty A.D., not *Three Hundred and Fifty*. He had come back, in priest's robe and rosary, into the most violent year of the Christian persecutions.

Now he understood, now he *knew*, what Kirkpatrick had done in the last frenzied moment while they fought in the door of the time machine. He had

changed the instrument settings.... He had sent Caesar back to Fifty A.D.

But it was still not too late, he thought with sudden wild hope. He was no Christian. He would tell them so, make them believe—

"Where am I?" he screamed, grabbing one of the calm, praying men at his side.

The eyes, brown, soft, kind, seemed puzzled. "You are in the Colosseum, brother."

"No, no," Caesar screamed.

Suddenly there was a new tone in the voice of the crowd. It was an exultant, ominous roar.

A sword flashed downward, chains rattled, and great doors were hauled away from tunnels leading to the pits.

Caesar began to run. He ran forward blindly, trying to make the slanted, pike-topped sides of the Colosseum. He heard the new noise, something other than the roar of the crowd, but he didn't know what it was, didn't realize what had happened or what was coming, until he turned his head.

And then he saw the animals and screamed for the last time.

THE END

GENIUS



AT WORK

By RALPH COX

W. F. G. SWANN is a famous American physicist who, in a recent article, courageously presented an analysis of a problem which has confronted him—and very likely many others who have ever had occasion to wonder at the differences between "pure" scientists and "practical" engineers and inventors. Considering these two types presents a sort of dilemma to which there is no easy answer. So far as Swann sees it, both types are essential and neither is superior to the other, though the physicist usually thinks he is!

Consider, Swann says, a man like Maxwell who, by the sheer power of physico-mathematical analysis, lays the foundation for the famous "electromagnetic equations", which are the very warp and woof of modern electrical science. By themselves they are just marks on paper, yet their implication is terrific and the whole advance of modern electrical science from the light bulb to television and radar has its roots in these abstract equations. That is an impressive and marvelous accomplishment. On the other hand, Maxwell's name is

linked with no concrete, down-to-Earth invention.

Edison, on the other side of the ledger, was a practical inventor who worked "by guess and by God", by cut and try, by intuition and experiment, less by logic than by feel. It is redundant to list his inventions; everyone knows that he laid the basis of modern power technology. Inventions of immediate practical, utilizable, value flowed from him like water from a fire hose. Yet he knew nothing of theory, was suspicious of theorists, detested hypotheses, and was positively contemptuous of mathematics! He didn't know what he was working with when he worked with electricity, yet he produced incredible riches!

How are we, Swann asks, to reconcile the viewpoints of these two contradictory men? They were poles apart in mental attitudes, yet each did extraordinary work in the same field of electricity and the names of

both will endure as long as electrons flow. One was a scientist; the other an engineer.

These men serve as but two examples of such diversified types: all through the history of technology the same types have existed. For every scientist there has been a practical engineer, the latter operating by feel and, with a fresh, unfettered attitude, producing things which would never have occurred to the former.

Swann concludes that each is essential, and that neither is superior to the other. As he points out, the theoretical acoustician who knows all about the mystery of sound does not dare to tell a skilled violinist how to play a single note. All his instruments are helpless before the beauty and power of a Heifetz or a Rubinstein!

The mathematician and the theorist have their place—but so does the practicing engineer or mechanic, and a good one of the latter is a lot more valuable to the world than a poor one of the former!



LET'S HAM IT UP

By Omar Booth

"DAH-DIT, DIT-DAH" is not baby talk, nor is it the mysterious numbling of the Martian invaders. Wherever radio amateurs get together you'll hear plenty of this cryptic spluttering, for "dah" stands for "dash" and "dit" stands for "dot", the basic symbols of Morse code. Before radio amateurs get their licenses they must learn to send Morse code at the rate of thirteen words a minute, and by the time they've learned to do that, they've been driven half nuts! This single requirement has undoubtedly prevented many interested people from playing the absorbing games of amateur radio, amateur television and amateur electronics.

The government (which often knows a good thing when it sees it) recognizes the enormous influence amateur activity has wielded in science. This has been particularly true of electronics, where nearly all first-rate engineers and scientists at one time or another have toyed with amateur radio transmitting and receiving stations. Very often it is these early interests which have led them into the field of electronics, cybernetics or what have you. The usefulness of the amateur as an inventor and as an expert technician in wartime hasn't been forgotten either.

The government has come to realize that there would be many more amateur radio operators than the current hundred thousand if that code requirement of thirteen words per minute did not exist. Therefore

the government and the FCC have decided to issue a less exacting license, one requiring a knowledge of code at the rate of only five words per minute! Also the technical knowledge requirements are simplified. This means that any applicant who knows enough to prevent him from interfering with regular assigned radio can get a license to transmit and receive over certain restricted radio bands. There are no age limits. The authorities hope, naturally, that this will persuade new tens of thousands to enter amateur radio and TV and, incidentally, stimulate them to want to know more, perhaps to the extent of becoming scientists and engineers.

By such sane and sensible regulations the government is laying the groundwork for the electronics age looming just before us. The vacuum tube and all that it implies in terms of scientific advancement is the basis for the future technology of the country. The push-button age is here. But brains are needed for design and stimulation. The new "fiver" amateur will, as is usual with amateurs, be right in the thick of the developments. If you want to have some real fun, learn something about the most fascinating of all sciences, and help your country at the same time, take a look at the new amateur regulations. You'll help turn fiction into science—in many respects a lot easier than the other way around!

* * *

TOO OLD TO DIE



He had the weapon out and working before they knew what was going on...

He was an old man and they tried to tell him he was ready for the scrap heap. But it seems old men often get young ideas!

By DON WILCOX



HOURS BEFORE the alarm sounded, the Venus Capitol was in a bad state of the jitters. Rumors were running rampant. Counter-rumors declared that the danger was a myth. Those solid fearless American and European businessmen who were most influential in the Venus Capital held fast to their slo-

gan, "Business as usual".

The sad fact was, business was at a standstill. Both Venusians and Terrestrials kept the wires hot, calling the military headquarters and the new bureaux, demanding to know whether the danger was real or not.

"Usually reliable sources have declared that the Mars Outcasts are on

the loose again!"

Earthmen kept a watchful eye on their television screens. The Venus natives, less prosperous but well versed in the advantages of their newly acquired Terrestrial culture, kept their ears to their radios.

"Citizens of Venus are advised to be ready for any emergency."

Through the long night, a white-haired eighty-year-old man worked calmly, checking lists. No one would know that he was putting in twice the required time. He didn't care about that. The important thing was that his department in the offices of Supplies should not be a bottleneck.

"I'm knocking off," one of his assistants said.

"I'll be here when you get back," the eighty-year-old man said.

"You'll drop over some day."

"In case of an emergency, I want this desk to be cleared. Supplies mean lives. Life is a precious thing." The white-haired man looked up to catch the careless wave of his assistant, bolting out the door. The night of work went on. Day came, and gradually, with the passing hours, the aged man began to see daylight across his desk.

"At this hour Military Headquarters is unable to confirm the persistent rumors that a fleet of death-laden ships is on its way through the sky...."

"Authoritative sources have again issued a warning..."

"The central committee of Venus Capital Enterprises has announced business as usual..."

"Because of growing rumors, tonight's program at the City Auditorium has been cancelled..."

AN OFFICIAL order was passed across the desk of the eighty-year-old, white-haired man in Supplies.

"Mr. William Bangworth, Office of Supplies. You are hereby requested to appear in Conference Room 814 of the Civic Tower at once. Chairman, Committee on Personnel, Venus Capital Enterprises."

The white-fringed brows of the veteran of Supplies were knit in a deep scowl as his eyes lifted from the note. He disposed of the last remaining order on his desk and crossed to the door.

"Oh, Mr. Bangworth," one of his assistants called, overtaking him. "Who'll I get to help me with—"

"You'll have to solve your own problems, boys. I may not be with you long."

Another employee turned to catch his words. "What's this, Beetles? You're not quitting!"

"They're gunning for me on account of my age," Bangworth said.

"They can't do that. I'll go with you. I'll tell them that Supplies would bog down without 'Beetles' Bangworth."

"Thanks, boys. But we'll have to take what comes." He waved them back to their jobs. Bareheaded, his white hair fluffing in the breeze, he strode briskly across the City Square toward the Civic Tower. Native Venusians gave him friendly greetings along the way. He waved past them and hurried on to his appointment.

"BULLETIN. More than thirty orange-colored fighter boats are believed to be moving through the skies on the Mars-Venus route..."

Bradley Bangworth, a young officer of the Venus Capital Guards, paced the floor of the concealed bridge station at the foot of the Jallo-Jore outpost. The bulletins blared through the room, stirring his blood with steel determination. If the Mars marauders came, it was believed they would strike at the capital. He thought of

the danger that threatened thousands of people huddled together in that city, both Venusians and Earth families.

The person his thoughts revolved around most was his own grandfather. He glanced at the clock on the wall. The mental bond between his grandfather and himself would soon express itself in a telepathic conversation.

"Bulletin: All ocean outposts have been ordered to maintain close vigilance. Thirty-three orange-colored fighter boats are crossing the skies toward Venus...."

"Bulletin: Radio messages demanding a statement of identification from the Orange Thirty-Three have so far been ignored...."

"Warnings to the approaching Orange Sky Fleet have been repeated.... As yet, no answers.... If they advance into the zone of Venus without offering identification, death missiles may be dispatched, according to interplanetary law...."

Bradley Bangworth filed the incoming bulletins that were automatically printed off beside his desk. He glanced from time to time at the television screen, listening to the messages that were being radioed to people all over the civilized areas of the planet.

The prize, of course, was the Venus Capital, with all its wealth. But the ways of the Mars Outcasts were wily. They might attempt a sneak landing anywhere on the face of Venus. They were an unpredictable foe. From some of their past depredations upon the civilizations of Mars, they were reputed to be more destructive than acquisitive.

"The bad boys of the solar system!"

That's what the newspapers had said of them. Criminals, outcasts, men of vast war guilt, they fought back at human life with the viciousness of trapped animals.

BRADLEY walked through the cliff tunnel above the bridge, speaking briefly to his men at each of the gun emplacements. The bridge was the one approach from the ocean level to the city of Jallo-Jore. The city sat on the top of a great cylindrical rock. Its white buildings resembled sugar cubes on an inverted flower pot. Venus people had lived in those white buildings long before the coming of Earthmen, and however much they had welcomed Terrestrial technology, they were a difficult people to work with, encrusted in their traditions, and sensitive to injury. Bradley's policy was to handle them with velvet gloves.

Bradley returned from his brisk inspection tour to find one of the Venusian citizens loitering about.

"If there is anything I can do to help—"

That was the way Moss-Neekl always began. He always pretended to be a man of great influence in the city of Jallo-Jore. He would come about, mysteriously, as if his wandering footsteps had led him down the paths from the city, down through the tunnels, to the bridge over the deep narrow estuary which one must cross to get down to the level of the sea.

"If there is anything I can do, Captain Bangworth—"

"I suggest you go back the way you came. In case of trouble you'd be needed to help your people down into the shelters." Bradley paused to listen to another warning bulletin. "Hear that, Moss-Neekl? They say a general alarm may be sounded soon. That will mean shelters for everyone. Go back."

The round, waddling little Venusian moved toward the door reluctantly. His inquisitiveness about the ways of the Venus Capital Guards was a nuisance, but Bradley preferred to

feign deference rather than offend him.

"You keep looking at the clock, Captain Bangworth. Why?"

"Just a habit, I suppose," Bradley replied. It would have been silly to explain that he was looking forward to a mental-telepathy message from his grandfather at a certain hour. The Venusian had no word for telepathy; it was not in his thinking vocabulary.

"Perhaps you have inside knowledge that an attack is coming at some exact time?" Moss-Neekl pursued.

"Certainly not. If I knew, I would radio headquarters and everyone would be warned."

"But you keep looking at the clock."

"Please, Moss-Neekl. I have a personal interest in looking at the clock. It hasn't anything to do with the emergency."

"As a citizen of Jallo-Jore, am I not entitled to know?"

"This has nothing to do with Jallo-Jore."

"I don't wish to seem curious, but—"

"Go on back. Beat it."

"Is that an order?"

"Yes."

MOSS-NEEKL lowered his eyes and looked hurt. He sauntered out. He crossed by the narrow pathway in front of the window so that he could look back in at Bradley, impressing his suspicious gaze across Brad's eyebrows. Venusians, whose brows were crusty, like slices of turtle shell, were always aware of the adornment of fine hair that decorated the Earthman's brow. Moss-Neekl gazed back at Bradley's brows, and rested his jealousy upon Bradley's terrestrial handsomeness.

A car was approaching through the tunneled descent. Bradley's preview through the glass showed him that it

was the Earth girl, a roving correspondent, whom he had talked with recently. The car was a yellow auto-plane, convertible from ground to air travel.

She emerged from the tunnel and stopped in the shadowed parkway under the overhanging cliff. She walked briskly toward the bridge station, pen and notebook in hand.

Moss-Neekl came back, then, and entered just ahead of her, his small beady eyes glittering with triumph.

"Now I know why you were watching the clock. You had an appointment."

"I told you to beat it!" Bradley took a quick step toward him.

"I'm going. I'm going." The Venusian moved nimbly. He looked up at the girl as she entered. "The captain was expecting you. No wonder he had been watching the clock."

"I beg your pardon?"

"I am sure you two will not need me. I shall go now." With a bow and an arch expression from his crusty eyebrows, Moss-Neekl retreated up the tunneled roadway toward the city.

"He's balmy!" the girl said, looking after him; then she turned to Bradley. "I'm Glenna Richardson, the reporter—remember? Do you have another appointment? He talked as if you were expecting someone."

BRADLEY laughed. "He has a way of checking up on me. I had to order him out. If the sky-bombs came this way, he'd be blown to kingdom come. And you—hadn't you better get back into a shelter? You know, anything could happen any time—"

"I'm flying back to the Venus Capital right away."

"Very dangerous."

"I just wanted to stop by and thank you for your courtesies, giving me the story of Jallo-Jore."

"All right. Now you'd better go."

"I was told in Jallo-Jore that you have a grandfather in the Venus Capitol. Couldn't I look him up?"

"Certainly. You'll find him in Supplies. Just ask for 'Beetles' Bangworth. He'll be glad to see you. Now you'd better go."

"No other story for a roving correspondent?"

"There may be a big story ten minutes from now—or ten hours, or ten days—but if there is, who will there be to tell about it? You know, if those Mars Outcasts have actually come into possession of a few boatloads of sky-bombs, all our puny defenses here are worth a couple of drops of water in hell. Now, get going."

The girl folded her notebook into her pocket and started. She looked back with a smile. "That's right, you do have another appointment coming up."

"Women are as curious as Venusians," Bradley said, following her out to her autoplane. "All right, you've let yourself in for it. I didn't tell Moss-Neekl, but I'm going to trust you with something quite personal. Just a word. Listen fast."

"I'm listening," she said. He ushered her into her seat.

"My grandfather and I have a very close mental bond. Ever since I was a kid. We talk to each other by mental telepathy. We arrange times for a quick exchange. It's almost time now."

"Mental telepathy!" Glenn Richardson's eyes widened. "So you're one of those!"

"You too?"

"Goodness, no. All the mind I have is in my notebook. But what a story! Dashing young captain. Standing on the brink of danger. Perhaps only an hour to live—"

"Who knows?"

"And childhood sentiments flood his mind."

"I'm not denying it."

"He thinks of his aged grandfather. He *talks* with his grandfather—through telepathy! Captain Bradley Bangworth, may I quote—"

"Get going!"

"Wish me luck!" She bent toward him, offering her lips, and impulsively he kissed her.

"I wish you all the luck in the world."

"The wish is mutual, Captain." She spread the wings of her autoplane and a moment later she was rising over the ocean, heading into the southwest wind, toward the Venus Capital.

IN THE Civic Tower of the Venus Capital, one of the conference rooms buzzed with restlessness. Six committeemen did their best to pretend they were not distracted by the growing threat from the sky. Business as usual had been the order for the day. The clanging door of the elevator, the scurrying of feet, the echoes of visaphone calls through the building, were enough to drive everybody frantic; but the chairman stoutly rapped for order.

"One more piece of business, gentlemen. Come to order!"

The two reporters who had come to cover the story were now lost in watching the television screen.

"Turn it down, please, gentlemen. Order, please."

The reporters toned down the volume but sat close by, dividing their attention between the incoming news and the sturdy efforts of the committee.

"Now, gentlemen, it's up to us to make a decision about this old man."

The white-haired man seated to the left of the chairman's desk spoke up petulantly. "*What* old man?"

"I refer to you, Mr. Bangworth."

"I'm not an old man. I'm as young as any of you."

"My apologies!" the chairman said with tantalizing sarcasm. "Gentlemen, we're here to decide the fate of this eighty-year-old youngster. You know the facts. He's ten years past retirement age. Our special efficiency man, making the rounds of all Earth employees on Venus, has demanded quick action on all such cases. With an attack impending, it's doubly important that we act with dispatch. This man should be able to catch tomorrow morning's ship back to Earth."

"I don't want to go back to Earth," the old man said. "I want to stay right here and go ahead with my work."

"Yes, we understand," the chairman said with faint sympathy. It was his job to settle these matters, not to listen to workers' sentiments.

"I have many reasons for staying. I have a grandson here in the guards."

THE SECRETARY of the committee glanced at a paper and explained, "Captain Bradley Bangworth, stationed at Jallo-Jore, is this man's grandson."

"That doesn't change the fact that this man is eighty years old," the chairman said. "He was due for retirement ten years ago. At that time he was granted a five-year extension; and at seventy-five he was granted another five years—"

"He can still outwork any man of twenty," one of the committeemen spoke up. "I happen to know this man. He holds a responsible post in Supplies. He's never missed a day. He's not fast, but he's steady and reliable. The boys call him 'Beetles' on account of his beetle brows. Those white-tipped black eyebrows of his

are the envy of every Venusian. They like him. They cooperate—"

"We don't care about his frosted eyebrows," the chairman said. "All we care about is his age."

"Well, I'm here to say that Beetles Bangworth is still a darn good man, and if he's sent back we'll lose a lot of motion breaking in anyone else."

"He deserves a rest," the chairman said. "We'll send him back to Earth for a rest."

"I don't want to rest," Beetles Bangworth said, rising and plowing his strong fingers through his white hair.

"Go back to Earth and take it easy."

"Go back to Earth and die—that's what you're saying to me. You need me here. With this attack coming up—"

"Gentlemen, are you ready for a vote?"

"Please," Beetles spoke with a steady voice. "If these Mars marauders attack us—"

"The attack has nothing to do with it. That may all be an idle rumor. Gentlemen—"

The alarms sounded over the city. Bells and sirens turned the agitated metropolis into a swarm of terror. The committeemen rushed to the windows, looked to the skies. They listened for the commands that rang across the intersections from the overhead speakers. They turned up the sound of the television, trying to catch the confused information that was blaring forth.

"Stay where you are!" the committee chairman shouted at Beetles Bangworth. "We'll get to you in a minute. Stay where you are. Come back, men! This vote—"

Then the committee chairman himself darted off to call his own office and his own family, and a moment later everyone had raced away on

urgent errands. Beetles Bangworth stood in the conference room alone, the Forgotten Man.

"Bradford?" He spoke the name aloud, into the deep distance.

No answer came to him. It wasn't quite time yet.

THE TELEVISION news was pouring in fast. He paced the floor as he watched and listened. He moved the chairs out of his path to work off his pent-up energies. Those stupid committeemen, trying to make him out as an old man! The anger they had engendered in him, together with the excitement of the inpouring news, made him move with the alacrity of an animal about to break out of its cage.

A flash of red light across the room gave him a quick image of himself in the mirror. The light gave a reddish tinge to his white hair, and he thought of his own paternal grandfather, long since departed. "Brick" Bangworth, so-called because of his brick-red hair, had possessed the same swift stride in his day; the same military build, narrow hips, broad shoulders, high head; the same air of restless energy. "Brick" had been dead for more than forty years; it wasn't often that Beetles thought of him. And yet, at crucial times, there had been important and decisive echoes of an old man.

Old man! That was a term of endearment, not a description of the way Beetles had remembered him. Not feeble and bent; simply old in years. A venerable patriarch of the later Bangworth generations.

Well, lucky for old Brick Bangworth that he'd lived out his life in better times and under better circumstances, Beetles thought; he couldn't help being glad the old man didn't have to go through what he and Brad were about to go through on this day,

with battles of automatic sky-shells flashing their deadly lightning out across the solar system.

Some of the sky-shells riding up to meet the invaders were equipped with television eyes. They sent back the pictures that told the story. Rockets carrying deadly warheads found their marks, somewhere out in the void. Explosions three or four thousand miles away came in as blinding bursts of red on the screen. Then—

"Some of the marauders' ships have slipped through," the announcer spoke in dead tones. "Our wheel-guns are circling the horizons with deadly rays. The Venus capitol is adequately protected at the present hour. However, some of the outposts are likely to suffer destruction."

"Bradley!" the old man whispered as he paced. "Bradley, are you all right?"

No answer. It was almost time. Would there be an answer soon?

Again the announcer: "Military authorities have reported that all outposts are in a state of readiness. Civilians have been ordered into underground shelters. All traffic has ceased on main thoroughfares. Air traffic has been ordered to take cover. If the Mars Outcasts should succeed in making a landing, highways and bridges will be destroyed wherever necessary."

"Bradley!" The white-haired man stood in the window looking off toward the misty gray sea. He closed his eyes, touched his fingers to his forehead. "Brad!"

A whisper. "Yes, Grandfather!" At last the mental voice had come through.

"AT LAST! I was worried, Brad. I couldn't hear you. There's so much confusion all over the land."

"I'm here, right on the dot."

"You sound so far away."

"Less than a thousand miles,

Grandfather. Right here at my bridge at the foot of Jallo-Jore."

"I'll not detain you. You're busy, I know. Are your men all set?"

"As ready as possible. So far everything is clear here. But we wouldn't have much chance against a direct hit."

"Brad, in case I shouldn't see you again—"

"What are you saying? Not see me?"

"It might happen that way."

"Where are you, Grandfather? You're down in a shelter, I hope!"

"I'm up in the Civic Tower, eighth floor."

"What? Why—?"

"The personnel committee called me in. They want to send me back to Earth, Brad. There's a ship supposed to leave at six in the morning."

"Back to Earth? Wait a minute! They can't do that to you. What's the idea?"

"My age, you know. Some efficiency officer has come in from Earth to check up on all Venus personnel. They were all set to vote on me when the alarm broke up the party. They told me to stay. They'd be back right away for a vote."

"You can't stay there. It's the most dangerous place on the whole darn planet! Hold it a minute, Grandfather. More bulletins coming in. I'll be back..."

The mental communication faded out.

BEETLES BANGWORTH was aware that some of the personnel committeemen had come back into the room. He rose gradually from the leaning position he had assumed during his mental conversation, his hands gripping the back of a chair, and turned to see the committee chairman standing across the room, staring at him. The other man in the room was

one of his assistants from Supplies.

The committee chairman blustered. "You still here? You'd better get down into a shelter."

Beetles heard only vaguely. He nodded, responding outwardly. But the noise of his present surroundings hardly touched him. He was waiting for the return of the faraway voice.

The committee chairman said, "It's all right, Bangworth. I've made reservations for you on tomorrow's ship. You'll leave for Earth at six."

Again Beetles nodded absently.

"We'll never get together for the vote. Everyone has chased off. Just forget the formality. I'll clear your record with a stroke of the pen. If we last till morning, you can make your safe getaway and forget all these Venus troubles. You can't ask for a better deal than that, can you?"

"Beetles!" the other man broke in. "Beetles, we need you—"

"S-s-sh!"

"Beetles, they're getting everything bawled up down in the office. You're the only one who can—"

"Sssssh!" Beetles Bangworth tried to wave his assistant away. "Just a moment, please."

"What's the matter, fellow? Has someone hit you? What did that committee do to you? You got the blind staggers or something?"

"Quiet! I'm getting a message! Quiet!"

"One of those!" the chairman muttered. "There's one in every hundred these days, they say. I don't believe in it, myself. Who is it, old man?"

"It's my grandson. He's over at Jallo-Jore."

"Jallo-Jore! He won't be there long," the chairman said. "Did you hear what just came in over the speaker?"

"I think he's coming back again. *Bradley!*"

The mental voice returned dimly,

the faintest whisper of a mental voice, touched with a weird excitement.

"Grandfather, if I don't see you—"

FLASH!

"What was that, Bradley?"

No answer came. Beetles repeated the question. His whisper grew heavy, tense. His lips began to tremble. Now he was calling aloud.

"Bradley! Bradley! What happened? Where are you?"

The chairman walked across the room and placed a hand on Beetles' shoulder. "I'm afraid that was it, old man."

"Bradley!"

"You'll not get any more answers, old man, if your telepathy gimmick is on the level. Did you hear what they just now announced about Jallo-Jore?"

Beetles straightened and stared at the chairman. "What did they say?"

"Listen. Here it comes again."

THE ANNOUNCEMENT came through in a flat tone as the newscaster, shown on the screen, said, "...the destruction of Jallo-Jore is complete."

"Bradley!" the white-haired man screamed.

There was no answer. The video voice boomed on as the torch of Jallo-Jore now sent its flames high into the darkening sky.

"We regret to announce... Further reports from automatic instruments which supply observations from all directions point to the logical conclusion that... We regret... The completeness with which devastation has struck makes it virtually impossible that any life should remain within a radius of..."

"Bradley! Bradley..."

"We can now state with certainty that death has struck its full blow upon Jallo-Jore."

"Bradley! ... Brad!"

The chairman stood beside the old man and patted him lightly on the shoulder.

"You'll want to go back to Earth as soon as that ship goes, Bangworth. I made reservations for you. It may not wait till morning. You'd better check up—"

The other man broke in, "Beetles, we need you like hell down in Supplies. That office is going wild without you to look after it. Especially at a time like this. Let's go down—"

"Bradley!" It was a low whisper.

"Too bad," the chairman said. He turned to the other man. "Personally, I don't take any stock in that mental-telepathy stuff. What about you?"

"I've tried. I never get anywhere. My idea is they're just kidding themselves."

"Let's leave him alone. He'll come down soon."

The two men walked out of the room. Beetles Bangworth was left—but not alone.

"BRAD!"

"Yes, Grandfather."

"Thank heavens! Oh, Brad boy, I thought you were dead."

"And what do you think now?"

"Why didn't you speak to me when I kept calling you?"

"I wanted to wait until those men were gone. They'd never understand."

"Brad, how do you know there were two men here with me?"

"Because I'm here too!"

"You're *here*?"

"Right with you, Grandfather. This is different from anything before. Don't *you* feel the difference?"

For a moment Beetles Bangworth's mind refused to take this in. He stood at the window looking out at the darkening sky. He walked across to the television screen, stared at its grotesque shapes of destruction, and

snapped it off. He paced to the other side of the room. There was no light in the room, and it was possible, he supposed, that someone might be hiding there, but he knew this was not the case. The voice he heard was entirely a mental voice, speaking within him.

From the shock he had received a moment ago with the announcement of the destruction of Jallo-Jore, he would have expected himself to droop, suddenly, and grow heavy with the spiritless weight of his eighty years. Instead, he felt unaccountably buoyant.

And now the voice of Brad rose within him again: "This is different, Grandfather. We can't get used to it instantly. It will take time. I must have been killed."

"Brad! I don't know whether I'm awake or dreaming." The aged man slapped his cheeks, and all at once he walked briskly toward the hall. He scorned the elevator, and with a springy step he descended the first flight of the stairs. At the first window he paused. "Brad—you're here! Within me!"

"That's it, Grandfather."

"But you were in Jallo-Jore."

"When the explosion hit, I was there—my body was there. But you and I were in mental communion. My mind was reaching across space to you, and then—"

"Then your body was struck!"

"And my mind took anchor."

"It stuns me, Brad. I—I'm dizzy."

"You're walking down the stairs too fast. Take it easy."

"A mind has to have a body to dwell in. It needs the mechanism of nerves and a brain—"

"I didn't take root in rock, Grandfather, or a tree, or a potted plant. *I didn't return to dust!* I'm residing all through your nerves, can't you

tell? Right this minute I can feel myself spreading through, exploring. *Can't you tell?*"

"What's your feeling, Brad?"

"H-m-m!"

Beetles Bangworth stopped at the foot of the ascent, stood for a moment in the Venus' darkness, trying to clear the dizziness.

"What did you say, Brad? What's the feeling?"

BRAD'S voice sounded relaxed and leisurely and it came, without any outward sound, into his grandfather's mind: "I'm just beginning to appreciate what people mean when they speak of the mellowness of age. Grandfather, you're not all tense and knotted up, the way I am. Your nerves are so—so *comfortable!*"

"Well, that's a strange one, Brad. I suppose it's true."

Then Beetles Bangworth realized that two men were standing nearby in the shadows of the entrance—the chairman and the man from the office. They must have overheard his own part of the conversation with Brad, the last few words, at least, for one of them said, "Poor fellow, he's talking to himself."

"Thinks he's talking to his grandson," the other said.

Beetles swept his fingers through his hair and walked past the men without speaking.

He crossed the city square, he passed the entrance to the space travel ramp where crowds of people, both Terrestrials and Venusians, were elbowing toward the reservation windows.

"You hate to see them running away, don't you?" Brad's voice within him said.

"How can you tell?"

"I can feel your resentment boiling up. I can tell, too, that we're on our

way to something exciting, I don't know what. Anyway, you're bristling for a fight."

"Me? I thought it was you, Brad," Beetles said. "I'm feeling quicker nerve reactions, though, I'll admit that. All I want is a fair chance to hit back at these damned Mars Mobsters. Are you with me?"

"Anywhere you go."

"We're going to volunteer our services."

"Aren't you needed in Supplies? Aren't they expecting you?"

"Brad," Beetles said, "your own wishes are pulling me in another direction. I can tell that you're right on trigger edge to get back at those boys that blasted Jallo-Jore."

"You know it!"

"They put one over on you, didn't they? Your defenses couldn't weather a direct hit, and you've got a hunch that some traitor set up the target that directed their blast. Right?"

"It's got me puzzled," Brad said. "I can't quite put it together. We thought we were screened off. But there was a certain suspicious-acting fellow—a Venusian citizen well known in Jallo-Jore—fellow by the name of Moss-Neek!"

"Do you think he'll still be alive?"

"If we had a plane—can you operate an autoplane, Grandfather?"

"Haven't touched one for twenty years, Brad, but you could guide me."

THE OFFICERS at the Venus Capital military headquarters were running circles around themselves trying to keep up with every demand. The threat from the skies had struck its full blow at the little island city of Jallo-Jore. Destruction was so nearly complete that no messages came through. Scouts, skirting the flaming island, were driven off by the invaders' guns. The enemy was trying hard

to get a foothold on the beach below the city.

But the defenses of Jallo-Jore had not been entirely destroyed. One big gun continued to spurt death across the bridge.

"Every ten seconds it shoots," a scout reported.

"It must be on automatic. But someone would have to be feeding it."

"Every ten seconds, whether there's anything to shoot at or not. No one's going to get across that bridge, friend or foe, as long as it keeps up."

High officials uttered the name of young Bradley Bangworth as they discussed the situation.

"If he were still alive we might have a chance to get through with some rescue parties. As it is, we don't know whether there's a living soul to be rescued."

"Except the person who's manning that single gun."

A general shook his head. That gun had a freakish sound; it must be completely machine-operated.

A tall, well-built man in civilian clothes elbowed his way through a throng of officers and came up to challenge the general with a special request.

"I'm William Bangworth. I want to fly to Jallo-Jore at once. Will you kindly outfit me with a plane and weapons? I'd like to get started immediately."

The general's jaw dropped; then his eyes narrowed and his lips tightened. "I'm afraid you're a trifle too old to join the army, Grandpa. We'll try to get along without your help."

"You need me. I can be of service at Jallo-Jore."

"You don't say!" The general questioned one of his officers. "Who is this fossil? Anyone know him?"

"He's from Supplies. One of their top men."

"Something must have bit him. What's he doing over here?"

Beetles Bangworth answered the question crustily. "I told you what I wanted. Issue me an autplane, a television eye, and an automatic ray gun. I'm going after a man—a Venusian—someone who has directed the incoming marauders from his secret post at Jallo-Jore."

"How do you know all this?"

"My grandson reasoned it out and told me. That's the way it had to be. We can't prove it yet, but if you'll give me what I've asked—"

"Who is your grandson, old man?"

"Captain Bradley Bangworth."

THE GENERAL turned to one of his men, who nodded. Then the general met Beetles Bangworth's challenge with a serious eye.

"If what you say is true, why didn't your grandson inform us before the marauders struck?"

"He didn't know it then. He didn't reason it out until after he was killed by the attack. Then he saw how it must have happened. A volley of sky-bombs from hundreds of miles away doesn't hit a city squarely by accident. Someone in Jallo-Jore was on their side, and that someone must have had the equipment all set up to radio the sky-bombs in."

"Just a minute, Grandpa," the general said sharply. "I might take you seriously. But you've made a few tongue slips that tell me you're a phony."

"All we want is a chance."

"We—who?"

"My grandson and I."

"Go peddle your potatoes somewhere else, Grandpa. Young Captain Bradley Bangworth would have radioed us by this time if he were alive. Dead or alive, he's on Jallo-Jore. And since the bombs struck, no message

whatsoever has come through. Lieutenant, show this man out."

Laughter from the swarms of officers followed Beetles through the door and out to the corridor.

The inner whisper of Brad gave his grandfather the courage to ignore the embarrassing taunts. "Pay no attention, Grandfather. I'm with you, and we'll find our way across to that island if we have to swim."

Again the urgings of street officers to take refuge in a shelter were unheeded. With a fresh burst of hope from Brad's whisper, Beetles Bangworth strode toward the Venus Capitol airport.

"See that autplane coming down for a landing. That could be—yes, that's my friend Glanna Richardson."

A moment later the white-haired man faced the girl as she stepped out of the autplane. He introduced himself, and her bright eyes widened with interest to learn that he was the grandfather of the young captain who had befriended her just before the Jallo-Jore catastrophe. Obviously she was shaken by the bad news.

"I'm simply sick over it," she said, and the aged man saw that her eyes had filled with tears. He wished he might tell her that the spirit and the mind of Brad were with him, strangely transferred when the death shock intruded upon telepathy; but it seemed best not to try to explain. If she would be willing for him to take the autplane—

GLENN RICHARDSON liked Beetles Bangworth from the moment they met, and suddenly felt a trust in him that was strong and sure. It didn't occur to her to ask him how old he was or whether he was alert enough to handle a plane. His steady eyes beneath his frosted dark eyebrows assured her that he

was used to holding his own in the world of younger men.

"Won't military headquarters send an escort with you?"

"They refused to give me so much as a weapon. Of course, they were terribly busy getting their forces lined out for action. I walked in on them without any official papers."

"I'll help you," Glenna said.

While Beetles saw to the refueling of the autoplane, Glenna carried her private storm back to the authorities.

They gave her the sort of reception to which a good-looking girl reporter was entitled, and she waited while they conferred behind closed doors.

"She's interceding for that old man. He still wants a gun."

"Did you check up on him?"

"Personnel is about to send him back to Earth on the basis of age. Looks as if he means to have a last fling before he ships out."

"We can't waste any good weapons on an old man at a time like this. Tell you what we can do. Fix him up with something that looks like a weapon. He won't get far..."

Two guards escorted Glenna back to the municipal port bearing the equipment Beetles Bangworth had requested. They installed the television transmitter and assured the aged man that wherever he went his adventures would be received back at the Venus Capital.

"My blessings go with you," Glenna said, offering her hand to Beetles. Then he stepped into the autoplane. Glenna and her two escorts moved back to give the plane a wide berth as it taxied about uncertainly.

"Prelude to sudden death," one of the guards muttered, and the other said, "Well, that's one way to avoid being retired." The girl, brushing tears from her eyes, breathed a prayer

as the little autoplane took off into the skies.

IN THE full record of Venus history that will be written some day, it will be said that eighty-year-old William Bangworth did all that any man could do—young or old—to upset the invasion of a gang of Mars Outcasts. It will be observed—and the filmed record picked up by the television eye will prove—that Bangworth succeeded in handling a ticklish life-and-death situation as cleverly as was humanly possible—succeeded, that is, until he tried to operate a gun that wouldn't shoot. And that was why he lost his life.

It was not a tragedy of old age. It was a tragedy of the traditional distrust of old age.

For William Bangworth went into his final fight with all the courage of a fighting man. He would have won his fight if he had been properly equipped. They had not equipped him properly because they didn't want to entrust valuable equipment to a man his age.

Just as the personnel department had refused to entrust him with the job which he was handling superbly, so the military headquarters had refused to entrust him with a chance to fight. And the time will come when they will review the facts and be forced to admit that they had thrown a valuable life onto the scrap heap.

AT THE first hint of dawn, Beetles Bangworth's plane settled cozily upon the one available landing place in the ruined city of Jallo-Jore. It was a solid floor of metal that formed the roof of a building belonging to Moss-Neekl.

Flames and smoke of the wasted city were still rising to darken the

early morning skies. But this one roof was marvelously equipped to resist the heat.

"This was it," the voice of Bradley came to Beetles. "My mind is taking in what your eyes see. Look at the radio equipment. That's the answer to Moss-Neekl."

"It's strange behavior for a citizen of Venus."

"He has always had commercial relations of some sort with Mars. The people of Jallo-Jore have looked up to him as a man-about-planets. He has made several trips."

"Then it stands to reason that somewhere along the line he made contact with the worst elements of Mars and simply sold out to them."

Beetles taxied the autoplane into one corner of the roof, back of a barrier of crates. It was partially obscured here from the wide stretch of roof plaza, though its television eye still commanded a view of most of the roof.

"At least we've landed without being discovered. Now, if we can establish for certain that Moss-Neekl and the Mars boys are working together, we'll have a lead to the nerve center—"

"Which is probably right here!"

"Right under the noses of the Jallo-Jore citizens. And no one suspected."

"But they should have. As much time as Moss-Neekl spent snooping, going around being suspicious of other people—"

They broke off with their speculative thoughts, now, for Beetles could feel his nerves growing tight from Bradley's tense thoughts. Sooner or later the occupants of this building would appear on the rooftop for any of a hundred purposes. Beetles had better be ready for them.

The rains began, and the smoking, flaming city became a fog of rolling smoke clouds.

Beetles made the rounds of the roof plaza, examining the clues it offered. He returned to the autoplane and tried to make contact with the military headquarters. He had hoped someone there might be following him by television. Getting no response, his one hope was that a sound film was catching his actions and words. He recited into the microphone the facts he had discovered. When he lacked for words, the whispered voice of Bradley came to his rescue.

That done, he sat comfortably in the autoplane to listen to the news events the radio brought in.

THREE OF the Mars Outcast ships had landed at the foot of Jallo-Jore. So far, the continual action of gunfire across the bridge had stalled them at that point. But they would soon try to take possession of the city, it was assumed. They were waiting for the fires to subside. The rain would hasten their plans.

Beetles heard a signal bell ringing. One ring. A pause. Two short rings. Another pause. Three—

And by that time the sound of an approaching autoplane smothered the ring of the bell. It was Moss-Neekl's friends, signalling on his wave length, announcing their entrance to his sanctuary.

Here came the proof that Beetles was after.

"Keep the television eye on them," the voice of Bradley whispered. "Don't miss a thing."

The little autoplane landed. Four Martians dressed in elaborate uniforms strutted out onto the roof plaza. A moment later the door at the head of the roof stairs opened and

Moss-Neekl waddled out. His pleased face showed that he recognized them. He gave them each the two-handed greeting customary to Martians.

They marched across the plaza, Moss-Neekl pointing proudly to the billowing clouds of smoke.

Beetles caught snatches of their conversation. Part of it was beyond his understanding. But he knew they were debating the danger of an attack from the Venus Capital. How quickly would their troops, waiting in the ships below, be able to entrench themselves in this city?

The trouble was, Moss-Neekl said, many inhabitants of this city were still alive, waiting down in the shelters. Others who had been caught by the bomb blasts were awaiting rescue.

"Have you brought the money you promised?" Moss-Neekl asked pointedly. "My share of the bargain has been fulfilled. I am ready for my pay."

Two of the Martians produced some weighty sacks from their shoulder-hung harnesses. Moss-Neekl smiled as he accepted them.

Then the traitorous Venusian directed them to the stairs that led down into the building. A conference table awaited their pleasure, and a feast of victory.

"Right down the stairs, my friends. I shall follow you in a moment."

They marched down. Moss-Neekl, hugging the sacks to his chest, suddenly turned and made a dash for the Martian autoplane.

"He means to make a getaway!" Bradley whispered tensely. "He's our evidence. He's our key. Don't let him!"

Beetles in his own autoplane shot forward like a high-speed bulldozer. He struck into the Martian autoplane and it went spinning over the wall.

MOSS-NEEKL leaped to the plaza floor barely in time to save his own life. His feet struck on the run. He hugged the bags of money and raced back to the corner cluttered with crates.

Beetles stopped, turned, started after him. Then he deserted the autoplane with its television eye pointed in the right direction. He bounded out and raced after Moss-Neekl.

Neekl was floundering, trying to hold his prizes in one hand, reaching for a pistol with the other.

"Get away from me. I'll kill you."

"You're through killing, Moss-Neekl," Bangworth snapped. "From now on you're on the receiving end."

"You think I'm afraid of an old man like you? Stop it!"

Beetles Bangworth dragged him bodily back into the full view of the vision eye, held him in a vise of arms, made him open the money sacks and spill their contents to the floor.

Then the four Mars Outcasts came bounding back up the stairs. Beetles seized Moss-Neekl's pistol and tried to fend them off. They came out firing. Beetles blazed back at them.

"Take cover!" Bradley whispered within Beetles' mind. "Don't let them get you.... That's better.... Hold your position, Grandfather.... Make every shot count. Your fire is limited with that gun, you know. Watch your chance.... There went one of them, down in a heap! You're doing swell, Grandfather. Pick them off, one at a time. Careful! Take no chances.... One of them's coming around the back of the plane. You're got one more shot, Grandfather! You've got to get back to your other weapon in the plane! Wait, there goes Neekl! After him! Quick!"

Beetles Bangworth's eighty-year-old body responded with the agility of an athlete. He sprang across the roof

plaza and caught Moss-Neekl by the ankle just as that traitor was about to disappear. Dragging him back, Beetles' fist struck a blow that sent the Venusian reeling.

Moss-Neekl lay limp on the floor. The Martians were maneuvering to get back to the heap of money spilled over the plaza. Pistols had gone dead. The fast action of Beetles Bangworth had played in luck. He made it back to his autoplane, kicking off one pursuer, and then he came out holding the automatic ray-gun the men from military headquarters had provided him.

Two Martians had been killed in the fracas, two wounded. Moss-Neekl and his two moaning compatriots lay on the floor exactly as Beetles Bangworth commanded. Beetles settled down with the automatic ray-gun at his side.

"I feel a little bit tired," Beetles whispered.

"Take it easy, Grandfather. Just sit tight. There'll be help coming along."

"**H**IS PHENOMENAL!" The general and his staff back at military headquarters were watching it all. "He's opened the way for us. Putting his finger on that damned Venusian—catching him red-handed! And what a marvelous fight—"

"It's a wonder he doesn't go ahead and blast hell out of his three prisoners."

"He'd better not try it," someone spoke up. "That ray-gun beside him is as dead as a coffin."

"Somebody'll pay for that," the general muttered.

Help had at last been dispatched. Television eyes brought back the progress of the bitter fighting at the base of the Jallo-Jore island. Rescue parties, within a few short hours, found their way into the shattered

city.

A special scouting detail made its way down the cliff with an order to put a stop to that incessant firing across the bridge. Arriving at the gun emplacement, the scouting party was puzzled to find one lone man moving back and forth, from ammunition to gun, *seemingly unconscious!*

"Wake up, Captain. You're moving in a dream!"

"He doesn't answer. Acts like he's dead, except he keeps moving. Look how his eyes are glazed. He must see, and yet—"

"He's an automaton!"

"He's been shocked. He's completely unconscious. Get him up to the first-aid station. He looks as white as death."

They examined his identification as they led him up the path. "Captain Bradley Bangworth."

THE STAFF at headquarters watched the final drama on the roof plaza of Moss-Neekl's building. Their television screen unfolded the tragedy of a weapon that wouldn't shoot.

The rescue party could be heard coming up the stairs. Moss-Neekl, defying the gun that Beetles Bangworth held on him, made a mad dash. The Martians, though wounded, hurled themselves into the fray. The three of them sprang at Beetles.

Beetles would have mowed them down. On trigger edge, he thought he was ready for them. For hours on end he had been on the alert, and until now he had not made a single slip. But now—

The gun failed to operate.

"He's got the goods on me!" Moss-Neekl shouted. "Kill him!"

The three of them pounced on Beetles Bangworth, seizing anything they could get their hands on for weapons.

The dead ray-gun was jerked out of Beetles' grasp.

"Life is a precious thing," was the last faint thought that slipped from the mind of the Grandfather to that other mind that had resided within.

As death came to Beetles Bangworth, the murderous Venusian made a desperate dash for the wall. The soldiers bounding up the stairs overtook him....

AT THE improvised station where first-aid was being administered to the survivors of Jallo-Jore, Glenna Richardson knelt beside Bradley. At last a hopeful movement of his eyelashes had promised a return to consciousness.

"Brad, you must come back to life. You must!"

"I—I'm trying to," he whispered. "Glenna?"

"Brad, your grandfather died heroically."

"Yes, I know...."

"You've been aware then? You saw the television broadcast of what happened?"

Bradley shook his head. "I was there...with him."

"You've been unconscious, Brad. You stayed at your post all through. But they say you were unconscious—"

"My mind was elsewhere. If I can be as solid at eighty as he was—"

"I got to know him, Brad," the girl said. "Just a little, before he started off for this island. He was wonderful, Brad. I loved him. And you."

She bent close to him and kissed him.

"Brad, Brad, please get well."

Bradley smiled faintly, and then a curious look of surprise came into his faraway eyes.

"I'm—I'm hearing a voice!" he murmured.

It was a very strange voice, deep within his mind. It seemed to say, "*She wants to be your friend, Brad. Leap at the chance. Leap!*"

Brad whispered within his own mind, "Grandfather! Are you here with me?"

And the familiar mental voice whispered back, "I'm here all right, Brad. I came back home with you. I hope you don't mind!"

"Oh, Grandfather!" Brad was suddenly speaking aloud. "Glenna, I've just received the most wonderful news. My grandfather isn't entirely lost! His mind is here with me. We've come back together, to my body. He was speaking just now...."

Glenna looked at him with concern. "You're feverish, Brad. If you'll let me, I'll take care of you."

"If I'll let you!" Bradley breathed.

Again he heard that strange deep voice, "*Leap at the chance, Brad. Leap!*"

"It's Grandfather. He's telling me—"

The familiar whisper of Beetles Bangworth broke in with a word of explanation. "It wasn't I who spoke, Brad."

"Who, then? The voice sounded strange."

"It was just one of my ancestors, your great-great-grandfather, *Brick Bangworth!*"

"My grandfather's grandfather!" Brad exclaimed aloud, his eyes dancing.

Glenna kissed his eyelids. "You're feverish, dear, but I'm sure you're going to be all right in time."

And the whispered voice of Beetles Bangworth added, "Brick's all right. He's kept me company for years. When he speaks, you can't go wrong."

THE END

THE FROZEN TWELVE

By TEDD THOMEY



LELAND BOONE got the idea one night while thumbing sadly through his checkbook stubs.

The first entry was bright and handsome—\$1500 he'd received from the Hukill Research Foundation's scholarship fund. But after that, with everything going out and nothing coming in, the green ink figures showed

a dismal decline. The present balance was a puny \$42 that had to see him through the rest of the semester. And there was next year to worry about.

Sitting there in the rented sunporch that was three-fourths laboratory and the remainder bedroom, Leland Boone scowled. He was a medium-sized chap, thirty years old, with alert blue eyes.

**Boone's educated pencil was beating the
roulette wheels until a rain storm came
up and drove the country numbers-nuts!**



There was a dull explosion, a blinding
flash and gamblers, wheel and Leland Boone went skyward

At the corners were numerous crinkly lines from long hours of squinting at advanced volumes on electrodynamics and radioisotopes. Long hours of filling sheet after sheet with quickly scribbled, super-complex networks of equations and formulae had stimulated the growth on his middle finger, right hand, of a pencil-callus the size of a small hazelnut.

The main trouble was that Leland Boone had been late getting to college. Now, after five years of straight A's (except for that one B in thermodynamics), he was still twelve months away from his doctorate in physics.

And quite suddenly he was sick and tired of living on the thin edge of poverty.

He'd read about salesmen selling pots and pans and making a hundred bucks every week; and here he sat, a guy with a pretty fair brain, practically going on forty already, with nothing but lint in his pockets. Never enough money for a few extra cigarettes, no money to get his shoes resoled, no money for—

It was then, while he was getting a drink of water, that he noticed the word *Nevada* in the old newspaper under his electrolysis setup on the sinkboard.

The scowl became deeper and he scrubbed his knuckles thoughtfully in his bristly, buff-colored hair. He set the tumbler down with a grimace, deciding vaguely that a little copper sulphate had remained in it from this morning's experiment.

Slowly he went over to his old desk and sat down. He got out five or six sheets of paper and then the yellow pencil stub began to fly, making complicated algebraic tracteries.

FIVE MINUTES later, there was a wide grin on Leland's lean, faintly tired face.

It was simple, ridiculously simple, and there was no question in his mind but that it would work. Nevertheless, he carefully rechecked the equations. Then, satisfied, he took a large sheet of heavier paper and sketched a work drawing. One of the main things, of course, was the need for a small, but extremely generative, power plant. His friend, Dr. Ziff, one of the assistants in the radiation lab, would be glad to lend him a few of his new batteries. They were small, flashlight-sized, but each one packed the wallop of a large car battery. Four would be enough for this project.

When he finished the drawing around 2 a.m., he decided to start putting the apparatus together. He borrowed the necessary relays and condensers from a rig he'd been using to measure the exact conductivity, to eight decimal points, of a hair-like piece of platinum. Then he went to the warped cardboard case which was his clothes closet and frowned at the two coats hanging there. Reluctantly, he decided to take the new one—the dark brown sport coat with the subdued green overplaid. It was only four years old.

Placing the coat on his work table, he began measuring, snipping and soldering dozens of wires until he had assembled a system as complicated as the veins in a leaf. Then he laid the whole affair inside the coat, clipping it in a dozen places to the brown wool. After that he fashioned two large coils, each having 970 turns, which he placed in the sleeves. They were just large enough for his arms to fit through.

Shortly after noon, he walked to the bus station. Ten hours later he was in downtown Las Vegas.

ALMOST immediately, he found that he'd made a mistake. Although it was nearly midnight, the desert temperature stood right around

100, and big quivering drops of sweat cruised down Leland's temples. Underneath the thick woolen sport coat, rising columns of steam told him he was in danger of short-circuiting his apparatus, but there was nothing he could do about it. The coat couldn't be removed and folded over his arm. Because of all the wires and relays it was as stiff as plaster.

He felt very self-conscious. The sidewalks were busy with people in jeans and light silk cowboys shirts and he was sure they were staring at his hot, bulky coat. He walked along slowly, looking in the windows of the various neon-bright casinos and wondering how much the miles and miles of red, green and yellow tubing affected the town's temperature. Once he felt a few drops of water on his cheek that weren't sweat, yet he didn't see how it could be raining.

After a while he went into a bar, and by the calculated spending of two dollars for a few bourbon-and-sodas became involved in conversation with a wily old prospector wearing a tobacco-yellow mustache the size of a whisk broom. When he'd learned what he wanted to know, the location of a casino with a reputation for dishonesty, Leland excused himself.

The *Horned Toad* was a large, garish hall, but Leland found it suited his needs excellently. In the first place, it was air-conditioned. Also, it was so mobbed with men, women and clinking silver dollars that he was quite certain no one would notice him.

He waited until a chair was vacant at one of the huge roulette tables and then he sat down. He did not play, but merely watched to see if the process was the same as he'd believed it would be. It was. The mob put down their silver dollars and the croupier, after waiting a decent sixty seconds, raked them all in. The crou-

pier wore a platinum-colored western shirt and a black sombrero hung across her back by a cord that went around her slim white throat. She was quite business-like, and Leland decided it was too bad someone as petite and brunette as she found it necessary to work for crooks.

When a chair became vacant closer to the spinning black-and-red wheel, Leland changed a bill into ten silver dollars and sat there. As he reached inside his coat and turned on the master switch, he noticed that his fingers were trembling a little. He also noticed that his coat gave off a faint humming sound, but he didn't think anyone else would notice.

He took out a piece of paper and a pencil stub with a needle point. The paper was camouflage, since it wouldn't be necessary to do any computing. Nevertheless, he jotted down a few figures to keep the brunette from becoming suspicious.

THE GIRL spun the wheel and the small white ball began to dance. Quite casually, Leland touched the groove in the side of the pencil to the copper wire that trailed down his sleeve into his right palm. The wire made contact with the pencil's lead. He aimed the point at the ball.

The ball slowed down.

He moved the pencil point away. The ball speeded up.

Leland grinned. The +RI factor was working fine, creating a beautifully concentrated field of magnetism about the ball. The first time around he didn't quite nudge the ball into the No. 12 slot which was his target. He missed the next time by a hair, but the third time was the conventional charm and he made it easily.

"Say, *hombre...*"

It was the girl's voice and it came so suddenly Leland jumped as if the

sheriff had put a hand on his shoulder.

"You won't win anything," she added, smiling, "by just sitting there twiddling your pencil. You're supposed to bet."

Leland nodded, noting that her eyes were a lovely clear brown, and placed a silver cartwheel on No. 12.

He lost the dollar—and nine more in quick succession.

He swallowed, grinned weakly at the girl and went out in the street to think things over. A look into his worn black wallet told him what he already knew; only \$19 remained of his total bank account, including his bus fare back to Los Angeles. The loss of a few more dollars and he'd be all through. He frowned, feeling the wheels turning again in his head.

Leaving the main street, he walked down an alley, ignoring the hot humidity and the few raindrops that were falling. A naked bulb was burning above a row of ripe garbage cans behind a restaurant. Sitting down a respectful distance away, he took off the coat and studied its wire insides.

AN HOUR later he walked back toward the *Horned Toad*. He had readjusted everything, adding a wire that ran down his left sleeve and a second pencil stub. Now, according to his theory, he could catch the celluloid sphere in a negative and positive crossfire of magnetism and guide its ramblings from two directions.

He went inside and waited till a chair again was vacant close to the wheel. The girl smiled at him as she pulled in a glittering mass of dollars with her small rake.

Leland played a dollar on No. 15. He lost. He also lost on 22 and 29. Each time the ball settled one groove away from his selection.

He shook his head. This was fan-

tastic. According to all his computations, he should be winning. He passed a palm over his forehead and it came away dripping wet.

"You know," said the dark-haired croupier, "this isn't exactly Norway and you might possibly be cooler if you took off your coat."

Leland shrugged, casually he hoped, and played a dollar on No. 12. Gritting his teeth, working the two pencil stubs like chopsticks, he fought the damnable white ball around and around the wheel.

It slowed. He saw the red No. 12 swinging around toward him, leering at him. Suddenly on the wheel he seemed to see all the extra cigarettes he hadn't smoked, the fine dinners he hadn't eaten, and the girls he'd never dated in five years of college scrimping. To hell with playing it cautiously!

The ball dropped into No. 35 while the wheel was still turning. But Leland didn't stop juggling his pencils as he'd done before. He kept focusing the pressure. And the ball rolled out of the groove and into the adjacent one. No. 12.

He saw the brunette blink at the ball before she paid him off, but he didn't care. He earned that thirty-five dollars and he had the sweat to prove it.

Again he laid a dollar on No. 12 and forced the ball to roll back this time from No. 28 just before the wheel stopped. It hopped into No. 12.

The brunette's smooth dark eyebrow shot up a full inch and she stared at the ball as if it were bewitched.

"Ah!" said Leland and held out his hand, taking pains to scrooch the wire up his sleeve and out of sight while the girl stacked the bright metal on his palm.

Next he played two dollars on No.

35 and lost. He also lost two dollars on 34. He put five dollars on No. 12 again and won. He now had a collection of substantially more than 200 of the big coins.

He placed fifty dollars on 12. He knew it wasn't wise to keep playing the same number, the house might grow suspicious, but he also knew that No. 12 was the only one that worked. It must be the way his relays were hooked up.

Leland mopped the water off his high forehead. With the current turned on so steadily, the coat had become a toaster. But the heat didn't bother him as much as the possible loss of the fifty dollars. It was as much as he spent in a whole month at the university.

"It can't possibly come up again," said a man behind him, "but I think I'll go along."

The man reached over and laid ten dollars on 12. Leland noticed that none of the others were playing. They were watching and waiting.

Again the large wheel was spun and again Leland jockeyed his pencils. His heart was pounding in his throat—but needlessly—because this time he got the ball into 12 without making it jump back and forth.

From all around the table came grunts of surprise, plus a cackle of joy from the man who'd played the ten.

THE CROUPIER folded her arms across the front of her platinum-colored shirt. She looked carefully at the No. 12 slot in the wheel, and then just as carefully at Leland.

From a drawer under the table she drew forth a pad of fresh new bills and counted out \$1750 which she handed to Leland.

"Excuse me a moment," she said.

When she returned, she was fol-

lowed by two big-shouldered men wearing expensively-tailored suede jackets.

"May we have a word with you, please?" asked the one with the tiny pink eraser of a nose and the large dry lips. There was a crack in the center of his puffy lower lip. Obviously he had to breathe through his mouth; his nose was useless for that sort of thing.

"Of course," said Leland. He followed the men into a large quiet office. He suspected they were the *Horned Toad's* owners, but he didn't feel the least bit guilty about beating their crooked wheel.

"I'm not sure what you're doing out there," said split-lip, "but it's got to stop!"

"Sorry," replied Leland, starting toward the door. "I have to make one more bet."

"You've been warned!" said split-lip ominously.

Leland returned to the table and placed one hundred dollars on No. 12. Play had stopped on all the other gaming tables and several dozen people were crowded around, watching him. He jotted down a few figures on the paper so they wouldn't get too suspicious of the pencils. Then the wheel was spun and he nonchalantly got the pencils into position.

The next thing he knew there was a terrific explosion and he felt as if he'd been slugged across the shoulders with a two-by-four.

He was knocked to the floor and trampled on by people who were doing a lot of yelling and screaming. A weird sensation gripped him, numbing him. He couldn't tell whether he'd been hit by ice or fire. Finally the last of the running legs went over or past him and he sat up.

Looking around weakly, he saw that rain was falling on him through the

heavy timber roof which had opened up like the aperture in an observatory. He also noticed some small blue flames eating their way briskly through the padding in the right shoulder of his coat.

Staggering over to a nearby table, he picked up a schooner of beer and dumped it on his shoulder. The flames sputtered and went out.

Then he returned to the roulette wheel. The table had been split in half as though by an ax and the wheel was now vertical instead of horizontal. Still stunned, thinking the owners were foolish to wreck the place just to stop him from playing, Leland left the *Horned Toad* and walked on wobbly legs down the main street back to the bus station.

By the time he got to the waiting room, the storm had drenched him to the skin. He was too exhausted to try and figure out what had happened. There was a dull pain across his shoulders, and he was so tired he went to sleep on the hard bench despite the thunder which rumbled and boomed outside. A couple of hours later, a kind-hearted station attendant woke him and put him on a Los Angeles bus.

For a while he slumped on the soft leather cushions, balancing between wakefulness and sleep. On the seats behind him two men were talking. He caught snatches of their excited conversation.

"Darndest thing ever happened," one man was saying. "This guy won five, six times on No. 12. Then the lightning hit and everybody ended up drinking next door. I went up to the wheel..."

Leland's chin dropped to his chest.

"...just for a gag," continued the man, "and I won. Kept playing No. 12 and I won every time till the owner came up and shut down the wheel."

The man made a clucking noise with his tongue. "Could've made a fortune. Funniest thing, though, was people were winning on 12 all over Las Vegas..."

Dazed, Leland went to sleep.

EVERYTHING was dark when he awoke, slowly, like a man coming out of a bad dream. He didn't know where he was until his groping hand located the bed-lamp's switch. Blinking against the bright light, he found himself lying on his own bed, still wearing all of his clothes including the lumpy sport coat. There was a terrible taste in his mouth, as if it had been rinsed out with sulphuric acid.

The electric clock above the sink told him it was 10 o'clock, and he decided it must be Saturday night. Vaguely he remembered taking a taxi home from the bus station.

Then with a start he sat up. He plunged a hand into his coat pocket and brought out a shower of silver dollars and a fistful of green bills. Feeling better, he counted them. Almost \$2000. More than enough to see him through the next year. And as soon as he received his doctorate, he'd get that job in the experimental radiation lab.

He slid off the bed, grimacing because his shoulder blades were so stiff. When he removed the coat, he saw that the wires were tangled. In places some of them had melted a little and then hardened.

Quite suddenly he remembered the blow he'd gotten across his shoulders and the hole in the *Horned Toad's* roof. He shuddered. It was a wonder the lightning hadn't killed him!

He took a bath, switched on some gentle radio music and fixed a light lunch of cheese and stale rye bread. Following a station break, an an-

nouncer began a roundup of sports news:

"What a day this has been in baseball!" said the brisk radio voice. "The scores were unusual, to say the least. The Cleveland Indians beat the Red Sox 36 to 24. In the National League, the Phillies took St. Louis 12 to 0, while the Cardinals ruined the Pirates by an amazing 48 to 36. Those are not basketball scores, folks! It seems that nearly every man who stepped to the plate hit a homer!"

Leland took another bit of dry bread and listened curiously while the announcer reported that an unprecedented record had been established that afternoon at Hollywood Park. Long shots had won all the races and they'd all paid off at 12 to 1.

A little later a straight news reporter came on the air to announce that it was the first day in years without a single traffic fatality reported anywhere in the nation.

In the morning, Leland noticed a small item in the paper that all the gambling casinos in Las Vegas had been closed. He was busy throughout Sunday balancing an equation on rectilinear propagation and didn't turn on the radio again until late evening.

The announcers were frantic.

They reported that the carnage on U.S. highways all day Sunday had been fearful, 312 per cent higher than average. There'd been catastrophes and disasters: a mine cave-in trapped 72 men in Pennsylvania; in Ohio a flash flood drowned 96 people, and two huge passenger planes collided over Shannon, Ireland's airport killing another 108. In Anaconda, Mont.,

a fire had spread from the copper smelter to wipe out a dozen city blocks. There was more news of the same hour after hour, followed by a sports footnote that all baseball games had gone into extra innings, with the batters in both major leagues going hitless. The games had all been finally called at 0 to 0.

LELAND laid down his pencil and scowled. For a long moment he gazed thoughtfully at the radio. A lot of strange things had been happening the last two days, ever since he returned from Las Vegas. He shook his head. A series of coincidences, of course.

But he didn't dismiss matters so easily on Monday, Tuesday and Wednesday as the newspapers went wild with black headlines. During those three days not one death was reported anywhere in the world. And during those same three days not one birth was reported. Obstetricians were baffled. Morticians were worried.

A thought had been nagging at Leland all day Wednesday, but he'd pushed it aside as too far-fetched. That evening, however, he ignored his textbooks and got out the work drawing of the network of wires that went into his sport coat.

It was long after midnight when he dropped his pencil. Before him were page after page of equations and formulae. He sat there rigidly on the old straight-back chair, an expression of shock on his tired young face. His hands were shaking.

It was fantastic.

But he'd checked and rechecked his figures and knew they did not lie. The bolt of lightning had done the damage—all because he'd been tampering with the roulette wheel's odds. The terrific voltage had shot through his apparatus, increasing its power at

a tremendous rate for just an instant. But increasing it enough to nudge the whole law of averages into a weird pattern of contrasts and multiplicity. Because he'd been fooling with 12 on the wheel, that number or its multiples was involved in all the phenomena that had been taking place; baseball scores, horse races, even the disasters.

Leland's face was pale. He licked dry lips. It was obvious now that the law of averages, just like the law of gravity or even Lenz's law, could be affected if the proper forces were brought into play. In this case the law of averages' time elements had been jogged from the norm. For example, that business of the births and deaths. Normally there would on occasion be only a few seconds when no births or deaths would occur anywhere in the world. But now, because of this new quirk, that time element had been extended to days—it might even become weeks. From now on everything would be in contrasts; either nothing would happen or everything that did happen would involve No. 12. And, come to think of it, zero was also a multiple of 12.

LELAND stood up, knocking over his chair. He went over and snapped on the radio.

An announcer came on after a moment with the breathless news that once again births and deaths were being reported on a near-normal basis.

Leland drew air deeply into his lungs and expelled it slowly. Well, that was one relief anyway. But there was no telling what the next deviation would be. It might even—

He didn't complete that thought because something else had suddenly occurred to him. He grabbed some change off the desk and hurried out the door.

A few minutes later he was in the phone booth at the corner drug store talking to Dr. Krantz of the university's biology department, who did not appreciate being awakened after midnight to answer crazy questions.

"Those fruit flies you've been working with, Doctor!" said Leland. He tried to talk slowly. "Any deviations?"

"Huh?" grunted Dr. Krantz. "For this you woke me up?"

"It's important, believe me!"

Dr. Krantz yawned. "Well..." He paused. "Now that I think of it, the newest batch of eggs—"

"How many?" demanded Leland.

"One hundred forty-four. And for some reason no males, just females."

"You're sure?"

"Of course!" snapped the doctor. "There are *no* males!"

"Thank you," said Leland. He hung up.

For a moment he continued to grasp the receiver, the knuckles standing out whitely while the import of what Dr. Krantz had said sunk in. The fact that the number of eggs was the square of 12 was no surprise. But that other trend...

He lowered his hand slowly, the crinkly lines deepening around his blue eyes. What if this particular schism in the law of averages were to continue indefinitely? What if the women of the world were to bear only female babies until—

Obliteration!

Suddenly he crashed his fist in anger against the varnished wood of the phone booth. *Why me?* Why did I have to be the one responsible? All I wanted was to make a few ordinary dollars!

The mood passed as, gradually, he forced emotion from his reasoning. He considered phoning Dr. Krantz again, or Dr. Ziff, and asking their advice.

But he knew it would take hours to convince their orderly minds of the truth, to explain in detail those long pages or equations he'd worked out.

He knew now that there was only one course open to him. He strode from the drug store.

THE NEXT afternoon, Thursday, Leland Boone stood in the main room of the *Horned Toad* looking up at the hole in the roof. Again he was wearing the bulky, stiff sport coat, its wiring repaired and readjusted. His eyes were bloodshot from lack of sleep and his chin was shadowed with an untidy stubble.

The place was deserted, except for the girl croupier who sat on a stool watching him. He'd found out that her name was Beth.

"You're sure," he asked again, "that your bosses won't mind?"

Beth tucked the tail of her red silk shirt into her jeans. She shrugged. "Not those guys. They've been drunk all week, ever since the wheels went haywire and they closed up."

She watched him drag the wobbly roulette table over under the gaping roof section. "Anybody ever tell you you're kind of a character?"

Leland nodded glumly. He sat down after he was satisfied that the table was directly under the exposed end of the lightning rod he'd installed on the roof.

All afternoon and evening he sat there, occasionally spinning the wheel, and glancing up to see if any dark clouds were forming. He did not turn on the master switch inside his coat. Quite methodically, the ball stopped at 12 or 36 or 24. No wonder all the casinos had closed.

He'd made up his mind that when the time came he'd try to work the ball into No. 11. At first he'd considered zero, but he'd changed his mind.

No. 11 was placed exactly opposite 12 on the wheel—so if his theory worked the law of averages' balance would be restored.

He and Beth talked very little. He was glad she was the kind that didn't ask questions. From time to time she left, staying away for an hour or so visiting friends elsewhere, bringing sandwiches and cold pop when she returned.

On Friday the sky remained clear and blue. Saturday afternoon was the same. Leland spent much of the time either out walking with Beth or napping nervously on a sofa he'd placed near the roulette wheel.

He wondered if another electric storm was too much to hope for, even though Beth said this was the time of year for such weather. And then, late Saturday night, he heard the first grumble of thunder. Before long the black sky was split again and again by crooked arrows of brilliance.

Leland sat stiffly at the roulette table. He'd warned Beth to get out, but she wouldn't listen.

HIS MOUTH was dry. He knew there was an excellent chance that the lightning would strike twice in the same place. The lightning rod and the attraction of the wires under his coat would see to that. He refused to consider whether or not the voltage again would slide safely around him on its way to the ground.

The thunder grew louder. Once the wooden building trembled.

Leland got out the two pencils and turned on the switch under his coat. He realized he was afraid, more afraid than he'd ever been in his life. But he knew he had to stay in the chair.

Around and around the big wheel went, with Leland working the pencils, fighting the ball into No. 11.

When it hit, he didn't know it.

He didn't feel it, he didn't see it or hear it. One moment he was sitting at the table; the next moment he wasn't anywhere at all.

The darkness took a long, long time to lift. When he forced open his eyes, he found that he was squinting through the slits of a bandage which wrapped his whole head. There were other bandages on his arms and his body felt like it was asleep. He was on a white bed in a white room and a cool lady in white stood at his side near a white radio. Across the room Beth was looking at him, a frightened expression in the clear brown eyes.

"He'll be all right," said the nurse's soft voice.

"How long..." croaked Leland. "How long've I been—"

"It's Sunday evening," said Beth. Leland considered the fact carefully. Then he shouted: "Lord, don't just stand there! The radio!"

Obligingly, Beth twisted the knobs

until she located a newscast.

"And in the National League," the announcer reported, "the Pirates won the first of a double-header by a score of 11-10—"

Leland bolted upright. "No!" he yelled through the bandages. "Not 11!" It meant the whole balance was swung the other way. From even to odd—and now instead of 12 everything would happen in multiples of 11!

"That score again," said the announcer. "The Pirates won 11 to 2. So, folks, it looks like everything's back to normal again."

Leland lowered himself back to the pillow. He let out a slow sigh.

Beth stepped closer. "Feel better now?"

"Much better," he said. "You'll never know how much better." His bandaged hand touched hers gently.

THE END



FLOATING BRAINS

By Jon Barry

THE FANTASTIC success of robot-brains, automatic pilots as used in commercial and military aircraft, is commonly known. In a sense brothers of the familiar computing machines, these automatic brains enable a plane to hold to a preset course, automatically compensating for the effects of wind, temperature changes, and the like. It is known that efforts are being made to couple these automatic brains with ground radio stations so that the planes can be landed without human control, precisely and effectively.

It is not usually known, however, that ships also employ automatic pilots very similar to their aircraft brothers. Aircraft carriers, for example, use automatic pilots which, unaided by human judgment, automatically keep an aircraft carrier headed properly with respect to the wind so that planes may land and take off

Smaller vessels, such as destroyers, also use these automatic pilots, and it is possible to guide or control the entire movements of such a ship from a high-flying airplane. It is perfectly possible to visualize a naval battle of the future in which an admiral will direct the movement of his ships from a plane which can survey the entire battle from a height of many miles!

Merchant ships are already using automatic pilots as just that—automatic pilots—which guide the ships directly into the berths and harbor stations which have been selected. This again eliminates the possibility of error and failure due to human weakness. Robotry on this scale is extremely impressive, perhaps more so than among aircraft. It is hard to believe that ships weighing tens of thousands of tons respond to minute voltages generated by radio waves—but they do.



CHAPTER VII

AGE-OLD QUESTION ANSWERED

THE COVERING of five hundred historical years in what is little more than a preface presents contrasting hazards to the historian. Those of too elaborate detail on one hand, and too sketchy a presentation upon the other.

Yet, the panoramic preface seems necessary. To hurl the reader—familiar though he is with the cataclysm that was Byron—into the stark detail of the man's universally savage operations, leaves something wanting. In order to form even a vague concept of what Byron was, it is necessary to

understand that history is not—as some claim—a vast and ever-changing panorama. It is just the opposite: an unending repetition upon a giant stage. An eternal monotony of sameness—so far as the individual man and group-man is concerned—upon which some cosmic joker raises and lowers the curtain to an ever-changing audience.

The settings vary, but the play is the same. The same lines are spoken by actors who—beneath their chameleonlike exteriors—are ever one with those who shouted and gesticulated before.

Even Byron, the poet, was not new. He was done, in miniature, many times throughout the ages. Call him Napoleon, Caesar, Ghengis Khan. Study those men, and behind them you will sense the towering figure of the mighty Byron. (1)

Frustration stalked LeRoy Packard to the very end. On June 7, 2184, scarcely a week after he completed the building of a space globe from the blueprints furnished by Evon Trude, Packard was crushed to death by a falling steel bar in his workshop.

The tragedy was magnified by the fact that Packard wanted—more than any other being—to brave free-void.

His death brought Evon Trude to the fore. Trude accepted the fallen Packard's mantle of leadership and took the first globular-type spacecraft for a trial run on July 21, 2184.

The control he achieved over the huge Porter-steel ball was amazing, even to those entirely familiar with its specifications. It was lifted three hundred miles above the Earth's surface

on four jets, and its formidable array of accessories and mechanisms was subjected to basic tests.

On his second trial trip, Trude jetted Packard I to a speed of ninety-four thousand miles per hour, with eleven hundred revolutions per minute of the outer shell. Then he returned the globe gently to Earth. (2)

A short time later, Trude and his crew set Packard I down upon the Moon's surface and brought back specifications of the equipment needed for exploration. (3)

In the history of the world, probably no bit of *sensatiana* created such a public stir as did the verification of the Lunar caves. This, probably, because of the elements of mystery and drama involved. The cave entrances had of course been discovered a century previous, with the aid of Zelkov's delayed counter-refraction telescope. The old photos, however, had not been conclusive. They served only to create two factions upon Earth: those who believed the caves existed, and

(1) Beach Davidson, *The Eternal Conqueror* (Marlowe and Pine, 2314; on the Calais University tapes, 2350).

(2) Detailed accounts of Trude's test flights can be found in the following records: *Trude's Flying Platform* (Pennsylvania Associates, 2195).

Porter—Man of Metal (Bobbs-Merrill, Hays & Crawford, 4th Revised Edition, 2190).

Evon Trude's Report to the Pennsylvania Associates, (2184).

(3) Rafe Bullock, *Moon Caves—Eternal Enigma* (Huntington Photo-Press, 2192) inquires in part: "...how were those endless square miles excavated? What became of the mountains of rock and soil taken therefrom? One is almost forced to the conclusion that the caves were inhabited by two different races with a span of time between occupancies. Such a conclusion can be drawn from the primitively crude cities found within the caves.

"Those who lived in these cities certainly had not the skill and intelligence to make the original excavations. Therefore it seems logical that a super-race came first; that they eventually vacated and were followed by the lesser people.

"But how was life sustained in the caves? No vestige whatever of the requirements for living were found. No atmosphere; total darkness. And what could have happened to the creatures themselves? No graves were found. No sign of them whatever; not one particle of dried flesh or bone."

Nathaniel Tate, *Problems in Logic* (on the Calais University tapes, 2189) says: "Though nothing conclusive can be arrived at relative to the Lunar peoples, certain conclusions may be drawn concerning the Moon itself. The satellite must definitely have originated outside our family of planets, possibly in some far section of the galaxy. This indicates that our galaxy is inhabited, and by creatures far more intelligent than ourselves."

Tate went even further by prophesying that, having once come, the Moon-folk could, and would, repeat their migration across space. All that can be said is that—to date—they have not done so.

those who did not.

Trude's videograph of the vast inner home of a dead or vanished civilization left the world gasping. The reasons why this mysterious race went underground were self-apparent. It had, no doubt, been a matter of dig in or perish.

These long-gone neighbors of Earth were obviously creatures of high intelligence. But the mysteries highlighted by Trude's discovery have confounded mankind to this day. (3)

Another curious result of the Lunar cave discoveries was brought about by an alert and well-read publisher. Believing the Lunar caves were reminiscent of a certain twentieth-century writer named Charles Fort, and encouraged by public interest, this publisher reprinted the only Fort book still in existence at that time. The volume sold well. (4)

One additional comment seems pertinent. Whatever their origin, the caves were there—waiting patiently to fulfill a new destiny—waiting to serve

the ends of Byron the poet.

Various tag-ends of development filled out this period. While Man was happily engaged in preparing for further planetary snooping, he was also mopping up in his own thorough-going wake.

The free-void heat pockets were analyzed by Favier. They proved to be composed of a combination of two sub-atomic gasses, the existence of which had been asserted by Manley clear back in 2007. (5)

They were conceded to be a part of the elemental material from which "space stuff" is generated, worlds in foetus, islands of subatomic creative matter.

Medical research kept pace with the times. Freed earlier of many problems by Schwartz antiseptic rays, medical science pushed the life span to an all-time high average of one hundred and fifty years.

Also, increased knowledge of cosmic rays created a situation in which the actual presence of death became the subject of a court ruling. (6)

(4) Charles Fort, *The Book of the Damned and Wild Talents* (The Dakin Press, 2185).

(5) From *Below the Atom*, a series of papers by Klein Manley (Calais University Archives): "It follows, therefore, that there are seven of these sub-atomic gasses, four of which exist somewhere in our galaxy. The entire seven constitute the ever-illusive and theoretical Alpha:

Where Alph, the sacred river, ran
Through caverns measureless to man
Down to a sunless sea.

"The sum-total of the seven remains beyond practical conception. Even the term gasses is used arbitrarily. The seven substances are elemental material in purest form.

"The remaining three most certainly do not exist within our galaxy, or even within the grasp of our minds as now constituted. But they do exist somewhere beyond mind-scope, beyond all the dimensions with which we are familiar.

"I do not wish to sound the note of discouragement. What I say is not defeatism in any form. It is merely an admission of temporary limitations. But we will not be stopped. If our minds are not capable of encompassing this problem, we will create a mind that can."

The passage used by Manley is from one of the ancient poets, Coleridge, in his poem *Kubla Khan*:

This poem and many of Coleridge's other works can be found on the University of Chicago tapes. It may be worthy of mention that Coleridge was Byron's favorite poet. Byron memorized everything of Coleridge still in existence.

How Manley rationalized his theory on subatomic gasses with the quotation from the mystic Coleridge could possibly be called obscure. This historian makes no pretense of knowing.

(6) *The People vs Finch* (Section 8, World Supreme Court, Zurich, May 15, 2182).

With the sustaining rays under comparative control, animal tissue could be kept in a living state indefinitely—even after brain tissue was destroyed. Hence, people fell into the practice of preserving the bodies of loved ones long after the brain had ceased to function.

In an historic decision, the World Court ruled that a human being is dead when the brain tissue wave falls to four or lower on the Higgins indicator. The Court decreed a body must then be disposed of.

The adventurous, by the hundreds of thousands, applied for immigration permits to Luna. A commission was created to pass upon the application, labor-hours being the price of permits.

Low speed rockets jettied equipment across free-void onto this new frontier, and the job of making the dead world habitable was taken up. (7) And this with the knowledge of new and greater frontiers to come.

Thus was the groundwork being laid, during this time of the Long Peace, for the coming of Byron. Two factors had contributed to the peace—freedom from want, and a world grown so small it could be held in cohesion under one well-integrated government.

Now, again, distance would become a factor, politically and economically.

The planets. Could anyone force-control them?

Byron.

(7) Talman (*Astro-Physics for the Lay Mind*) states: "The primary scheme of the basic Entity can be discerned to a great extent by the results so far achieved. That the scheme strives toward an objective is self-apparent. The tools with which the scheme is furthered are the Universe and all the things therein: the planets, the forces, the laws, animate life, etc.

Now as to mankind: We know his purpose in the scheme is unvarying. That is to say, man's purpose on Earth, Mars, Venus, or wherever he may be found in the Solar System, is one and the same. Therefore, his faculties, his abilities, his very construction, must also be basically unvarying. True, the environment must have an effect, but to say Man exists upon Mercury, for instance, and as a result of the environment can withstand a thousand degrees of temperature, is absurd.

No living organism exists anywhere in the Universe under conditions which would destroy Earth-life, granted Earth-life were given a reasonable period for physical adjustment.

Therefore, when the planets are visited, we will neither find fabulous super-beings, nor will we find freaks. We will find creatures very similar to Earthman, or we will find no life whatever.

A planet upon which no life exists seems—to the Earthling—an unpardonable waste. But the Basic Entity is notoriously prodigal. If one quarter of one per cent of all the planets in the infinite are inhabited, that number is astoundingly great. Concerning our family of planets, the facts are probably these:

MERCURY: A dead planet. No form of life could exist in its temperatures except some form of heat-resistant microbe life. Its existence is highly doubtful as it could not develop beyond primary stages and thus would be pointless.

VENUS: A dead planet. The situation here is quite different. Earthman could live on Venus and no doubt at some distant time will do so. But only under protection from Venusian conditions, these protections having been devised in more favorable Earth conditions. Venusian conditions make the origination of life there impossible.

MARS: A creature similar to Man did or does exist on Mars. If now present on the planet, his stage of development is problematical. We must not make the mistake of projecting Martian development on the basis of our own, nor feel them to be more highly developed because of the advanced age of their planet. Development can well be classed as a cosmic accident. We could easily find the Martians in the same evolutionary bracket as the Neanderthal.

JUPITER: A dead planet. Earthman could exist there with his present knowledge, but this knowledge could have been gained only in the benign climate of Earth.

SATURN—URANUS—NEPTUNE—PLUTO: Life on any of these is of course out of the question. Lapham, who has a large scientific following, believes these planets to be approaching the "cosmic crossroads", which the inner planets have already passed. He claims it lies within the realm of pure chance whether these gaseous bodies will form into hard substance or collapse, ignite and become outer suns.

CHAPTER VIII

THE SOLAR FAMILY

IN THE year 2210, Harold Zeigler, accompanied by eleven assistants selected by the Physicists, boarded a Veeman 802 Space Mariner, and safely crossed fifty million miles of free-void to the planet Mars. The crossing was accomplished in one hundred and nineteen Earth-days.

It had been known, of course, for over a century, that life existed there, and waiting Earthlings were somewhat disappointed to learn that the Martian inhabitant differed little from themselves.

The actual proof of the similarity was a triumph for Gord Talman, who had prophesied as much. His Theory of Primary Source, labeled originally the mouthings of a presumptuous upstart, were verified almost in their entirety.

Men of science were disappointed when Mars proved to be an agricultural planet, its inhabitants of comparatively low mentality. In only two ways did they vary greatly from Earthlings. They were of a single religion and had been so since the dawn of their known history. Also, they were vegetarians. Animals were killed for their skins, but the eating of flesh was inconceivable to the Martians.

They were separated into various tribes and their languages were many variations of a single, basic, mother tongue, composed mainly of gutturals.

No central government existed. Each tribe—of which there were some five hundred—was under a group of two or three leaders, the strongest and ablest men. These tribes spent a great deal of time on the move. As the season became favorable, they stopped

and raised crops. Then, possibly, they loaded supplies on pack animals and moved. Or, possibly, they remained where they were for a turn of seasons before traveling.

They fought as a matter of course, though they could hardly be termed warriors. Casualties were low, because of the primitive hand weapons used.

Their most interesting characteristic was a certain dullness of the senses. They seemed incapable of intense emotion in any form. Even their fighting was done more as a matter of course than from anger.

They viewed the arrival of the Space Mariner with phlegmatic indifference and went on about their business.

After Zeigler, the occupation of Mars moved swiftly. The procedure was likened, by historians, to the taking of the western Earth continents from native inhabitants, after the voyage of Columbus across the Atlantic Ocean. The Martians, however, put forth much less resistance.

The Earthlings of course justified their actions with the label of necessity. Thus they again proved their principle of justice for all save when expediency dictates otherwise. As had the Lunar expansion, the colonization of Mars solved the one great problem left to the Earthlings—living space.

This had become a problem indeed. No controls over procreation had ever been set up, and the population in the twenty-first and twenty-second centuries increased at an ever-greatening ratio. Man had moved under the earth and into the air, of course, but—even with the opening of both Polar continents—he was continually stepping on his own feet.

But now, with a new frontier to exploit, Earthlings went on their con-

quering way. The native Martians, after the Interplanetary Conference, were given one-tenth of their global space upon which to live and move and have their being. (8)

Within one hundred years the planet Mars was completely transformed. It became almost a duplicate of its sister planet of the inner orbit. With no great bodies of water to complicate things it was dotted with four hundred cities from pole to pole, set in exact geometrical pattern. The World Federation capital was erected at New Minneapolis, and agriculture became a thing of the past.

The climate, of course, forced the inhabitants to go under glass, Earthlings having no stomach for the bleak, terrifying winter which the Martians had taken as a matter of course.

Meanwhile, Venus had been bombarded with globes. This planet was not too disappointing to the seekers-after-wonders. A steaming world beneath eternal cloud layers, it was covered with a luxurious purple vegetation and was of breath-taking beauty. A single form of animal life was found: a peculiar slug living deep in the hot waters of the swamp areas.

But to all outward purposes, the planet was useless. An ambitious project was undertaken to glass in and refrigerate large sections of the

drier areas, and some three hundred square miles were thus salvaged.

But Venus was not a desirable place to live under any circumstances and, as additional living room was no longer a pressing problem, the planet did not prosper. Only the more adventurous cross free-void toward the sun, and World-Federation control was lax.

Soon the planet became the "slum of the Solar System". Only persons of dubious reputation found it advantageous to live there. The walled-off section—called Venusia—became the stronghold of the lawless element, and World Federation cared less and less about its welfare as time went on.

Thus did distance again begin weakening the authority of a central governing body. The most serious result of leaving Venusia to itself was that it became the headquarters of those to whom law enforcement was not wanted; a spearhead of scoundrels and rascals who would respond to the urgings of an even greater rascal.

The time for Byron was fast shaping.

EDITOR'S NOTE: The next installment of the history tells of artificial birth—the complete breakdown of central government in the planetary family—the race of untouchables which later made up the army of Byron the poet.

(8) John Lawrence (*Great Injustices of History*, 2418) says: "This (The Interplanetary Conference) was a masterpiece of straight-faced hypocrisy. The World-Government leaders—because there was no single governmental head upon Mars—sent minions of the World Police to 'invite' the leaders of the various tribes to confer at the Federation capitol in Minneapolis.

"The police, faced with an impossible task, cruised low over the land, picking one unfortunate out of every group encountered, until their ship was filled with wondering Martians.

"These they brought to Minneapolis, where they were treated like visiting dignitaries—treatment which the Martians themselves would be the last to understand. During the 'Conference', where no Martian uttered a single word, the decision was translated and read to them in body. It is doubtful if they even listened. They were too busy gaping at the wonders of the conference hall.

"After the reading they were taken back to their planet, set gently down and then kicked, with their bewildered brothers, into the reservations provided for them.

"As a result of the sudden confinement, they died off like plant lice. The Earthlings, however, fulfilled their moral obligations. They sent doctors.

"Within fifty years, the tenth of the planet allotted to the Martians was also usurped."



FOUNDATION FOR THE FUTURE

By Roy Small

IF A SYMBOL had to be selected to represent the modern age of science, it would not be hard to choose one. In fact, it is common now to indicate "modernism" with the elliptical figures of the stylized atom. The atom is the symbol of now and the future. Actually a much better, more accurate—if humbler—choice could be made.

Modern civilization is based upon the tractor!

That elementary machine has changed the scheme of things, not only in the United States but in the world everywhere, although the revolution is most complete here. Where one American today raises enough food for ten or twenty people, forty years ago he could do only one tenth of that. And the thing that has made his new outpost possible is of course the ubiquitous tractor. This machine has completely replaced the horse, is superior to it in every conceivable way, and is actually only one aspect of a hundred dif-

ferent machines it may be converted to or representative of.

The future will see more of the tractor—not less. Agriculture is stepping out of its primitive conception of the "farm" and the "rustic" and giving way to the ideal of a sort of agricultural factory, with none of the unpleasantness associated with the factory. There are now 4,500,000 of these machines on American farms. In another ten years saturation will be achieved and there will be 6 or 7 million. Tractor technicians, questioned about possible changes in tractors for the future, almost laughed at the idea, pointing out how beautifully the tractor has matured as a functional machine, without frills, designed to do a job. The tractor of the year 2000, they explain, won't be much different from the tractor of today—with the possible exception of an electric motor, a gas turbine—or, let's hope—an atomic engine!

* * *

THE DOPE



LIGHTS UP

"I GET A terrific charge out of it," the dope addict remarked as he took another sniff of "snow"—and the fact of the matter is that he spoke the truth! Scientists are beginning to suspect that there is a strong link between poisons—which narcotics are too—and electricity. The reactions which go on in the cells of a body are a strange mixture of chemical and electrical phenomena—ultimately, cells may be proved to be minature electric batteries.

Working on this hypothesis, scientists have unearthed the fact that poisons, ranging from familiar narcotics like Heroin and opium to poisons like strychnine and curare, have, effectively, an electric action on the human body, similar to a conventional electric shock. It is much as if an internal lightning bolt were let loose.

To confirm these beliefs, scientists prepared solutions of oils and salt such as are found in living cells, added poisons and, with suitable electrodes, measured the potentials generated. They were found to

be quite high. Cells are, in effect, changed into storage cells by this action of the poison, so that literally when a person takes poison in any form (narcotics too) he is getting a "charge"—an electric charge—out of it.

This is in keeping with what is known of the physiological action of poisons upon persons who have survived severe poisoning efforts. They report that they reacted as if they had received a paralyzing electric shock from a conventional source of electricity. The new experiments suggest that they may not be far wrong.

All nature apparently is electrical, including organic matter, as well as the more familiar electrical evidences of atoms and molecules. The secret of life, though we seem as far away from finding it as ever, resides somehow in an electrical manifestation of its force. Very likely the mysteries of life won't be unearthed in the biological laboratory, but rather in the mechanical shops of the physicists—an ironic twist if there ever was one!

—Merritt Linn



THE CLUB HOUSE

By Rog Phillips

IN SCIENCE fiction you have an occasional story about a robot that thinks. The idea of a thinking robot has been glamorized to the point where the modern problem-solving machines are fondly said to think. On the surface of it, it seems quite reasonable. You build (in theory) a machine made of wires, radio tubes, etc. It has "memory". It starts out with nothing, and eventually can say, "Hello, Joe!" with the proper enthusiasm—but that's where it falls down. Where would it get the proper enthusiasm?

Build it in, you say? Okay. Let's build it in. We already have the thinking robot brain built. It can learn, reason, theorize, imagine, talk, type, and so on. We want it to have normal emotions, too. We set up the emotional switchboard. There aren't many emotions. We'll take the one mentioned above, enthusiasm. Connect the wires from the enthusiasm relay to the artificial larynx in such a way that it will add the proper overtones and change the sound modulation to produce the tone qualities signifying enthusiasm. Now it's done. When the robot says, "Hello, Joe!" it sounds like it likes Joe. Likes? That's another emotion.

Let's leave the robot for the moment and study the human being. He can say, "Hello, Joe," and convey a lot of different things. Bluff heartiness, absentmindedness, quiet liking, dislike, worry about something else, dreaminess, impatience, relaxation, love (if it's a girl friend), pride and

love (if it's a parent), sadistic delight (if it's a gangster confronting a rat he's about to rub out), friendship (if it's someone he wants to be friendly with). That doesn't exhaust the possibilities, but it gives you an idea of their extent.

Let's consider the author-reader relationship for a moment. If I'm writing something, a story, or even this column, I have to be interested in what I'm writing or I start thinking of something else to do. If I'm not so interested I try to work up a synthetic, and it generally leads to a genuine interest in what I'm writing. At the same time I'm estimating your reaction as a reader. Will you be interested enough to want to read on? Will you be interested enough so that if the phone rang and it was someone you liked you would become impatient at the interruption and want to return to what you were reading?

Books on writing discuss emotional cycles or rhythms that a story should strive for. Mild peaks of interest, building up suspense, and so on. Actually, if you liken the human emotional complex to a pipe organ, what a story must do is play a tune on that pipe organ that has a certain rhythm and a certain melody. It may not play quite the same tune in everyone it acts upon, but it must avoid certain notes, most dangerous of which is the emotion of boredom, and must have passages where the emotional tune is clean-cut and strong. And it should close on a note that lingers after the writer's fingers have lifted

from the keyboard. Desire for more, liking of what was read....

Try finding a thought in your head that is truly divorced from all emotion. Found one? Interesting, isn't it? Assuming it had no emotion associated with it, it has now. The emotion of interest in it. Do you know someone who is quite unemotional: he never shows anger, never laughs at a joke? He has all those emotions but he keeps them concealed.

Now, let's sum up our brief study of the living human mind with this postulate that seems to be universally true: every human thought has an emotion—or more than one emotion—associated with it. We can add as a corollary that a thought can awaken an emotion, or an emotion a thought.

I think there's no room for argument there except from those who want to think of only certain emotions as being emotions.

How are we going to incorporate the emotional complex into the robot brain? What lies beneath emotion? What is its basic mechanism? For example, you get bored with a lecture. You become restless. Your mind wanders, but the words drone in, distracting your thoughts. You feel the urge to escape. You get up and leave. Or maybe you just go to sleep.

But, you say, a robot brain doesn't have to have emotions. How do you know it doesn't, *if it is to think*? All thinking I've had experience with, and you've had experience with, implies an allied emotion. By another analogy you might consider the thought as the mental particle and the emotion the field of the particle. Then, in the mental universe that is your mind, the thoughts (particles) array themselves into structures through the workings of emotions (fields), and the structures are moved this way and that by concentrations of fields (emo-

tions). Anger can make you notice faults and seize upon them for vindictive action. Love can make you notice virtues and seize upon them for culminating action and satisfaction. Anger can make you remember things you couldn't remember ordinarily. Curiosity about something can make you forget that important appointment you had to keep. Thoughts (mental particles) moving under the influence of emotions (mental fields).

Behavior patterns are unlocked or locked up by emotional keys. A man who is good at reasoning while calm often finds his ability to reason impaired or even destroyed under the power of a strong emotion. On the other hand, a person who ordinarily emotes his way through problems sometimes abruptly finds he can think clearly when confronted by an emergency that demands it.

When you consider all this, the problem of a mind in a robot brain doesn't seem so simple. A machine, whether of electrical units, as in the giant calculators, of mechanical units, as in the adding machines, or even of chemical units, as in some hypothetical synthetic brain, is capable of highly complex processes only if thought and emotion are always associated as they are in human experience. That is, unless we find what emotion is, as a mental thing.

* * *

Two letters of the same type came in this month's mail. They are from two different people who want to start a fanzine—if they can get enough subscribers to make it pay. One of them is to be photo-offset and sell for thirty-five cents, and be the best one ever published. The other is much more down to earth.

In the past I have published such announcements. These two, coming together, make me realize it isn't a good practice. If the fanzine is actually going to come out I know it would be nice for the reading public to know about it ahead of time. But too often the idea is just a passing fancy with the one who writes me announcing his or her intentions. Three months go by before the announcement appears in the Club House, and by then the idea has been forgotten. Subscriptions arrive, but ambition is gone. So, starting now, I review only actual fanzines that I have received, and if you want to publish one you had better start publishing. You may be sure that when that first issue arrives on my desk I will give it all the breaks.

There's another letter that's more on the beam. It's from Shelby Vick, Box 493, Lynn Haven, Florida, announcing a drive for funds to pay Walter Willis' expenses to attend the World Science Fiction Convention in Chicago during the Labor Day Holidays. The goal is five hundred dollars. That's a lot of money, but so far the results look good. Shelby Vick says, "The convention committee thoroughly endorses the plan, and lots of big name fen are helping".

The trouble with British fans' coming over here is that they can't take their money out of England for expenses over here. At least I think that's the big trouble. A British fan attended the Convention in 1949, his expenses over here paid by a similar subscription. It's been done, it can be done this time. Donations of any size from a dime up are welcome, but why waste a three-cent stamp on a dime? Make it at least a dollar. Okay?

And while you're at it, send another dollar to the convention committee if you haven't already, and plan to

vacation in Chicago this coming Labor Day and attend the convention. Address, Science Fiction Convention, Box 1422, Chicago 90, Illinois.

Charles Lee Riddle and his wife and children, who passed through Los Angeles and dropped over to see me, is now stationed in New York, where he was transferred from Hawaii. He drove his car across the country, and unfortunately, in Texas, knocked a hole in the motor block with a loose connecting rod and had to buy a new motor. In spite of that he got to New York all right, and informs me his permanent address is now P.O. Box 463, Church Street Station, New York 8, New York. He is editor of the fanzine PEON. He plans to continue publishing.

Might as well dive into the reviews now by reviewing his zine.

* * *

PEON: sample copy free, but include a stamp with your request. Charles Lee Riddle and all the other Riddles, P.O. Box 463, Church Street Station, New York 8, N.Y. Number 21, the December issue. The last one published in Hawaii. Jim Harmon reviews the prozines, and has an interesting preface and apology to his column, in which he calls himself one of the lost legion of fandom: those fans who have decided to spend all their time writing fiction for the pros, and are consequently never heard from again. Tom Covington has a story under the title "Master" which is well written but on an old theme—or maybe not so old, since it's handled in a new way. Alice Bullock writes a thumbnail sketch of Mack Reynolds which I know from personal acquaintance with him is authentic. He's a nice guy—though I had to be quick to get a taste out of the fifth of Irish Whiskey I took him when Mari and I passed through Taos a year ago. He finished it off and used half a gallon of wine as a chaser. But a 33 waist, Alice? Ha!

There's more. Charles puts out a well-rounded fanzine. He's a navy officer besides a stf enthusiast.

* * *

FLYING SAUCER REVIEW: free to those interested in investigating flying saucers; Elliott Rockmore, P.O. Box 148,

Wall Street Station, New York 5, N.Y. In a letter to me he says, "I recently read the March 1952 issue of *Amazing Stories* and would like to thank you for your kind review. So far I have received about a half a dozen answers and look forward to some excellent leads in my work. I am enclosing the second issue of *Saucer Review* concerning the July-October 1951 period of 28 reports and hope you find it of interest. The phenomena continues to increase and I am expecting a heavy increase about the middle of March due to Mars Opposition coming up about April 30th. Hoping this issue isn't too wild and wooly for you..."

On February 19th (yesterday, as I write this) there were reports of flying saucers in Korea. Interesting...

The *Saucer Review's* 28 reports are given factually. There's also a lot of work put into comparing their frequency with the conjunction of Mars and Venus, though what that could imply I don't know. Mr. Rockmore is spending a lot of time on serious study of the phenomena, and if you're interested, he's the boy to get in touch with.

* * *

FANTASY-TIMES: 10c; James V. Taurasi, 137-03 32nd Ave., Flushing 54, N. Y. The sf newszine that scoops them all, and even brings you the news before it happens, in its forecasts of the contents of the prozines, what new prozines will appear and when you can find them on the stands, etc. Mr. Taurasi has a staff of correspondents all over the country, and in addition keeps in personal contact with the editors and publishers in the pro field. His newszine has been in continuous publication for 143 issues, and now appears twice monthly. Photo-offset, which makes for good illustrations, too.

* * *

STF TRADER: 10c, 4/25c; Jack Irwin, Box 3, Tyre, Kansas. The tradezine, that's all, and that's all it need be. It's for you if you want to acquire back issues of prozines, books, etc., or if you want to sell or trade such items.

* * *

COSMAG: SCIENCE FICTION DIGEST: 25c; Ian T. Macauley, 57 East Park Lane, N.E., Atlanta 5, Ga. This is two fanzines in one, with Ian Macauley masterminding *Cosmag*, and Henry Burwell the *Sf Digest*. With their staff of co-editors, the whole thing is somewhat the mass work of the Atlanta Science Fiction Organization, and they aren't taking second place to anyone, with this issue. Photo-offset, with two terrific covers and an increase in size with more legible type-

size. Now let's see what the two halves contain.

Cosmag contains one story, "Pioneer", by Tom Covington. Based on the year 1978 in viewpoint, and looking back to the pioneering days of 1955 when the first experimental audhouse was constructed. Well written and a nice idea. In an article, "But Don't Quote Me", by Roger Dee, he takes a look at himself and at writing professional stories, and if he can really master his own article he should be a top professional. It's excellent. Every writer, budding or pro, can get a lot out of it. There's much more, including a good reader section.

Science Fiction Digest contains the second installment of Walter A. Willis' "The Immortal Teacup", which seems to be another history of fandom, from the Britisher's viewpoint. As most of you know, Moskowitz's "The Immortal Storm" is the American version and is really worth reading. Bob Tucker is the author of "Question and Answer Man". He discusses fan polls, analyzing the questions in such polls with Tucker wit. It's a reprint from *ZOMBIE* No. 61 of July 1946. And there's "October Observations", by William Young, reprinted from *STAR ROVER*, a FAPA publication. It's an article comparing *Galaxy* and *Astounding* and commenting on the apparent feud between the two. *Science Fiction Digest* is patterned on *Readers Digest*, in that it tries to bring reprints of outstandingly well written fan stories and articles that have appeared in other fanzines in the past. When you realize how few really outstanding items have appeared in fanzines (since obviously the prozines would get the best of fan fiction), this is worth getting.

* * *

BEGINNING THE FUTURE: no cost, but send a stamp; circulation now increased to eighteen, which is an increase of three since last month; Intergalactic Publishing Co., Box 1329, Grand Central Station, New York 17, N.Y. I don't know when a fanzine has appealed to me as much as this one—not because it's anything outstanding in itself, but because it started out being written in pencil, and has now become a very attractive one-sheet printing-and-mimeo job, and is going ahead in its own modest way with no bragging. It's published weekly. Its editor says, "This issue contains information on a new fanclub which charges no dues, but gives almost as many, if not as many benefits as any other fanclub. Information on a subversive group, considered by the U.S.A. as such, is also given. *Beginning the Future* expects to increase in size and format and method of publication sometime in February. It seems that the staff has secured a mimeograph."

That's what I mean about starting a fanzine. The only way to do it is start it,

and make it grow. If you wait until you get subscribers before starting it, just forget the whole thing.

* * *

TIME STREAM: No. 2; 10c; published quarterly by Paul Cox, 3403 Sixth Ave., Columbus, Ga. Three editors. The other two are J.T. Oliver and Van Splawn. A hundred and fifty copies printed.

Olive Morgan in "Vortex" discusses the strange gravitational and optical phenomena in such places as the mystery spots of Gold Hill, Oregon, Confusion Hill in Mendocino County, California, etc. I personally have visited the one at Santa Cruz, California. Bob Tucker authors "Omitted From History", which is an intriguing title. The prozine review section has the catching title "Bonfire", and is conducted by Jan Romanoff, who is due to get fired because he thinks reviewing prozines is synonymous with knocking them. At least that's what T.S. editors state at the end of the department, and that they are going to start a new department which "would give a brief outline of plots of the best and worst stories of the previous year or quarter, and then logical reasons for picking them." That, to me, sounds much more instructive and entertaining. A column supposedly "reviewing" something, which merely says it stinks, makes the average reader merely think the writer of the review stinks. Right?

Bob Farnham is the author of a rather well written story, "Destination Death". George Orwell reviews the book 1984 very well. The fanzine winds up with Paul Cox's account of the Nolacon, which would give you an idea of the fun you can have at a convention of stf fans.

* * *

SPACESHIP: combined with Wylde Star; 10c; Bob Silverberg, 760 Montgomery St., Brooklyn 13, N.Y. Third year of publication—and it's improved a thousand percent over the first issue that came to me for review then. Time certainly flies! Davis Ish, in "All This Must Stop", makes the remark that some fans get so interested in fan activities that they stop reading the prozines. I've noticed that too. Reminds me of churches where the members never get around to reading the Bible any more! He asks questions like, "Will the fan in the street five years from now know or hear of Lee Hoffman, Walt Willis, or Dave Ish!" Gosh! Maybe we'll have a fannish Salvation Army on the corner with its brass band, singing spaco ballads and passing out fanzines to the fan in the street. It might not be a bad idea at that!

Fred Chappell authors "Official Greeting", a touching story of Mars, short and well-written. A nice letter column, as any

old-time fan like Bob would have, with all his fan friends. And there's "Report From Australia" by Roger Dard.

* * *

EUSIFANO: February 1962; 10c; Roscoe Wright; 146 East 12th Ave., Eugene, Oregon. A real work of printing art as the fanzines of the Eugene Stf group always are. In many ways it's almost a slick prozine. "Two Ways From Sunday" by Marje Blood, and illustrated by Donna Covalt, is a seventeen-page story that I enjoyed immensely. One especially entertaining thing about Eusifano is the wealth of short articles and comments, some very humorous, some very instructive. There's high-quality stf poetry. The poem "Beyond Infinity", by Rory Faulkner, should be in the Satevpost. It's that good. Marion Bradley writes an interesting account of the history of Sam Merwin that does him credit. She likes him both as an editor and a writer, but prefers him as an editor.

The Eugene group is one of the most likeable I've ever met. I met some of them at Portland at the Norwescon. If you're new to science fiction their zine is one you'll really enjoy. They have no schedule of publication or deadlines, but do their publishing as they carry on their other fanactivities, in their own good time, and for their own enjoyment. That reflects in their fanzine and you'll enjoy reading it.

* * *

FANTASY COMMENTATOR: 30c; A. Langley Searles, 7 East 235th St., New York 70, N.Y. It's a long time since I've received a copy of this zine for review. It's the closest thing to a Journal of Fandom that ever came out, and this issue keeps up the quality. It was this zine that brought out the many installments of "The Immortal Storm", the comprehensive history of fandom.

"Stanley G. Weinbaum: A Comprehensive Appraisal", by Sam Moskowitz, is a long and carefully written article about this great writer and his works.

"The Ghoul-Changeling", by George T. Wetzel, discusses some of the unanswered mysteries about Lovecraft. There's a review of Fred Brown's "What Mad Universe", by Matthew H. Onderdonk. By the way, Fred Brown has moved from Taos, New Mexico, to Venice, California, which is a coast suburb of Los Angeles, where he has bought a house. To quote him, "The yard is so large I'll have to give up writing and spend all my time gardening". Mari and I dropped over to see him and inspect his house the other day. It's quiet there. He should turn out more of the really fine writing he has done in the past.

There are other reviews and articles, every one of which is up to the high stand-

ards that Mr. Searles has set for his fanzine. And he says that his two-year suspension of publication is over, but he won't conform to any schedule of publication, bringing out FC once or twice a year as time and material dictate.

* * *

TELEPATH: one shilling or twenty cents; A.W. Haddon, 4 Douglas St., Waterloo, N.S.W., Australia; December 1951 issue. Contents, "Thrills Inc.", by Vol Mola-worth—the author writes of his interview with that Australian prozine. "Book Agency", by A.W. Haddon, discusses the stf market in Australia, and especially Sydney. "The Moon in '52", by Robert Heinlein, that famous author, says we could go to the Moon now if anyone would foot the bill. The article was written four years ago, which makes it especially interesting. Could it be that the first passenger-carrying rocket will leave the earth this year? Or even one without passengers? That would really be something!

Twenty pages, a printed zine, typical of the high quality that comes from Australia. We should all give the "down under" fans a boost by writing to them and subscribing to their fanzines. How about it?

* * *

OPERATION FANTAST: Vol. 1 new series, No. 10, Autumn 1951; 75c/year; Capt. Ken. F. Slater, 13 Gp. R.P.C., B.O.A. R., 15, c/o G. P.O., England... U.S.A. representative Philip J. Rasch, 567 Erkskine Drive, Pacific Palisades, California.

In the editorial it says, "We are happy to bring you another tale by J. T. M'Intosh, "End of the Beginning", and a very interesting article by Dr. John K. Aiken, which is by way of being an enlargement on his letter published in the August issue of ASF. Those are the two main items in this issue, and we hope the balance of the material is equally satisfying to you." The story is really terrific. It's about transplanting a girl's brain into a synthetic body—only the mind in that brain is permitted to remain conscious during the change, and decides existence without a body is preferable!

* * *

That winds up the fanzine reviews for this month. Each month I am amazed at the tremendous amount of fan publishing. And fan writing, for that matter, since each fanzine has its contributors as well as subscribers. It's a wonderful thing, fandom; a crucible in which anyone can find enjoyment

and self-expression. Maybe that's why it appeals to so many. Where else can you find a medium of self-expression ready-made? I don't know of any other. Not for the budding writer or poet or artist or editor. Some of our present-day highly successful men in the stf field began in fandom. Ray Bradbury, for example.

And now, before I sign off for this month, I'd like to return to the discussion of emotions. I've been mulling the thing over and have come up with an interesting conclusion.

What are emotions? What are thoughts? It depends largely on what way you look at them. Take a sound, for example. A single note. If you have a piano or electric organ handy, play one note. You know that it's a vibration that impinges on the auditory nerves continuously, resulting in the mental thing called a single note of a certain key. It can be named, other thoughts can be associated with it, but it remains pure and unique in itself. It's mental, though what causes it is unknowable.

In a way it is analogous to an emotion. An emotion continues in the mind in the same way a note does. It can be divorced in concept from the things that give rise to it. It's different from a musical note basically in that it can seemingly be brought into full intensity from within the mind, while with the normal mind it takes an outside source to bring the musical note into full intensity. Memory merely revives the concept of the note, usually.

Observation of animals and people (of oneself in particular) shows that sometimes the content of thought can affect emotions, and sometimes the state of the body can do so.

I've come to an interesting conclusion about all this. That conclusion is that perhaps the emotional complex is in itself a mind, more basic than

the one we usually consider as being the mind. We have it in common with mammals and reptiles and every other animal organism I've ever heard of. We are not superior to them in the possession of it, no more complex.

Let's look at it from that angle for the moment. You have in you two minds, the emotional and the thinking mind. They are, in a sense, telepathically one. In the normal person they act in harmony. Sometimes one can dominate the other, and vice versa. Their relationships with one another can alter. A thing that excites pleasure one time may excite irritation or anger or any other emotion another time. A thing that you will ignore under the emotion of haste or boredom can attract and hold you when another emotion is affecting your thinking mind.

A purely intellectual thought train can dominate the emotional complex at one time, while at another time a pure emotion can dominate the intellectual thought train.

In a way the emotional complex is outside our control. You can decide to study some problem, and stick to it until it's solved, more or less independently of your emotions. You can't always decide to build up and hold any single emotion. You can want to be mad, and laugh instead. You can want to be happy, and be miserable. True, you can often work yourself into a desired emotion, but not always.

The emotional complex is more intimately connected with bodily function than the intellectual. It's able to affect your breathing, your heartbeat, your blood pressure, your digestion. Can you decide intellectually to cry and make tears come to your eyes? No. It's possible to decide to build up an emotion that produces tears, though.

You know of people who "have no

control of their emotions", and others who "control their emotions". You have probably known people who "get mad at the snap of a finger", and others who "never get mad". Those that "never get mad" probably do. That emotion doesn't find visible or audible expression. It finds expression in the tensing of stomach muscles, change of rhythm of breathing, upset digestion, etc. With the person who "gets mad at the snap of a finger", anger finds expression in shouting, berating, vindictive action, etc. In both persons the emotion of anger arose without conscious ordering, tried to dominate intellectual thought, and to a greater or lesser extent did dominate it.

Study your own mind in the light of this idea: that the emotional complex is a mind telepathically connected to the intellectual mind in such a way that the two are basically different and related only in a loose, functional way, so that one can influence the other in varying degrees of intensity, but seldom ride roughshod over it except in insane people, or in badly adjusted but more or less normal people.

Give your emotional complex a name. Joe's a good name. Next time you get mad why don't you just think, "Joe's acting up again"? Maybe that will put "Joe" in his place. Next time you get afraid just think to yourself, "Joe wants to scram outta here". Then it isn't *you* who are afraid, or fighting mad. And next time you feel a thrill of pleasure think to yourself, "Joe likes that!" Then maybe you'll like "Joe", and you and he will work better together!

The robot brain? Maybe it could have an emotional complex built in after all. If you build one, though, better leave out some of the more dangerous notes.

ROG PHILLIPS

SECRET IN THE SKY

ONE OF the most profound mysteries of the universe—the reason for the greatest cosmic explosions ever witnessed by man—is now on the verge of being solved. Three times in the history of mankind giant stars have suddenly exploded in the depths of interstellar space—exploded with the force of ten billion billion atomic bombs. The flash that resulted equaled the light of a hundred million suns. These supernovae suddenly flared up in the sky, their light so intense that they could be seen brilliantly even in the daytime. For two years they remained visible, the light gradually disappearing, and leaving behind an expanding gas cloud that continued to shine faintly.

Experiments in studying the atom have now uncovered various facts regarding these supernovae. They show that the exploding stars were giant cosmic atomic bombs, ten times the size of the sun. Evidence shows that they were not uranium, plutonium, or hydrogen bombs, but were probably composed of a radioactive form of beryllium that doesn't exist on Earth. This isotope of beryllium has a mass of seven—four protons, three neutrons. The beryllium found on Earth is not radioactive. It has a mass of nine—four protons and five neutrons.

Studies were made at the Brookhaven National Laboratory, in Upton, Long Island, under Dr. Borst of the University of Utah, where it was noted that beryllium seven has a half-life of 53 days—in other words, that half of any given quantity of this element is transmuted to a lithium of atomic mass seven in that period.

Of the three explosions of this type of which we have a record, one, in 1054, was recorded by various Japanese and Chinese astrologers; one in 1572 by a Danish astronomer, Tycho Brahe; and the third by the German astronomer Johannes Kepler in 1604. These records correspond exactly with the 53-day period, where the light of the exploded star diminished to about half in 53 days. According to Dr. Borst,

this means that the star consisted of at least 90 per cent of radioactive beryllium of mass seven. To produce the explosion of the magnitude observed, he figures that the star had a mass about ten times that of the sun. Therefore, the beryllium seven is produced in a fusion reaction similar to that in a hydrogen bomb, where the nuclei of two light atoms are fused under tremendous temperatures and pressures into the nuclei of a heavier element.

It would seem then that beryllium seven is formed by the fusion of nuclei of two helium atoms after the star has used up its hydrogen supply.

Dr. Borst explains that the process is not an explosion, but rather an implosion, a bursting inward, like the collapse of a balloon, or an atomic bomb. The expanding gas cloud which surrounds the star after the explosion resembles the ball of fire which is seen after an atomic-bomb explosion. Its tremendous pressures and temperatures make it impossible for the star to regulate its heat production, and so it collapses—unlike the sun, which radiates away as much heat as it produces and thus remains in equilibrium.

In the normal star, heat from the center causes expansion, but in these giant stars, more material gravitates to the center, producing ever-increasing pressures and temperatures, until collapse comes with an implosion.

Studies show that the expanding gas cloud which is left after the explosion shines by the glow of another radioactive element, carbon of atomic mass 14.

By E. Bruce Yaches

SCIENCE FICTION

BOOKCASE

TOMORROW, THE STARS, edited by Robert A. Heinlein, Doubleday & Co., New York (\$2.95).

The anthology cornucopia of science-fiction stories continues to spew out its never-ending stream of collections. This one, edited and with introduction by Mr. Heinlein, assisted in his compilation chores by Truman Talley, Judith Merrill, Fred Pohl and Walter Bradbury, features, in all but two of the fourteen selections, stories written or at any rate published and copyrighted between 1949 and 1951. Hence, most of the tales it recounts are going to be familiar to hep post-war followers of modern stf.

Yet, it is a sound and generally interesting collection, which stresses craftsmanship generally up to slick-magazine standards and ideas at least moderately arresting in development if not over-original in concept. Save for the lack of the new thought, it is a book which exemplifies Mr. Heinlein's almost Cromwellian attitude toward this branch of fiction: he has himself practiced so well and so entertainingly for so long.

The second paragraph of his Preface consists of the following sentence: "The purpose of this book is to give you pleasure." And it is. But in his all-out campaign against the lower-case branches of the field which he correctly states won a "trash" rating from almost all serious readers and critics—in his attack on

what he calls "pseudo-scientific fantasy"—it seems to us that Mr. Heinlein has been guilty of an editorial near-crime he probably never could be guilty of as an author.

He has weighed the stories judged for his anthology according to his scientifiitionally Puritanical principles first, then, and only if they passed judgment has he considered them as stories. The result is a certain sterility that gives the volume an operating-chamber aroma inevitably reminiscent of the Mad Doctor theses now, praise Allah, thoroughly outmoded.

Perhaps it has to come—a determined effort to lift stf to what may or may not be its rightful place in so-called "serious" literature—but we hope all conscious efforts toward such promotion are crowned with failure. When stf is good it has always been literature—as witness Dean Swift and Voltaire—but to insist it be nothing else is to destroy certain raffish characteristics that have inevitably given it both humanity and vitality.

We'd have given at least one eyetooth if the editors had included just one old-fashioned utterly incredible BEM—especially of an anti-human slant—or even one of those silly female pseudo-scientists with Lana Turner figures. But then, we always preferred Jack Barrymore, even in his latter years, to such aseptic current

stars as Robert Taylor and Gregory Peck.

* * *

BEYOND THE END OF TIME, edited by Frederick Pohl, Perma-books, Garden City, New York (35¢).

In the selections for his somewhat larger anthology, Mr. Pohl has been guided by no such logical opinion of the limits of stf. In *his* introduction he suggests that after finishing the volume some may ask you, "What is science fiction?"

His reply is, in part, "Reader, you're not the only one who has trouble with that question. Because there are nineteen stories in this book, there are nineteen answers to it right here."

As the above might suggest, the literary quality of his pick, while generally very high, is not on such an altitudinous plateau as all of Mr. Heinlein's selections. As a corollary, to us at any rate, the volume is a lot more representative of the science-fiction field as a whole.

Isaac Asimov's *Heredity*, Cyril Kornbluth's gorgeous *The Little Black Bag*, Ray Bradbury's familiar *There Will Come Soft Rains*, Jack Finney's *Such Interesting Neighbors* and Horace Gold's *Love in the Dark*, to list them in the order of their appearance, were the high-spots of this symposium, with the others trailing off from excellent through good to merely fair. But, somehow, we doubt if any other reader will like its contents in the same order.

But we have a strong hunch every reader of science fiction will go overboard for at least as many of the tales included—according to his own tastes and psychological compulsions and background. And even if fewer of this group of fine yarns appeal

to said reader he will still, at 35¢, be getting a fat bargain.

* * *

THE GREEN HILLS OF EARTH, by Robert A. Heinlein, Shasta Publishers, Chicago (\$3.00).

Mr. Heinlein as an author is totally different from Mr. Heinlein the anthologist. This collection of ten of his finest short stories and novelettes, including the four with which he put science fiction into the *Saturday Evening Post*, constitutes something of a red-letter publication event for all science fiction readers.

For while Mark Reinsberg, in the introduction termed "An Appreciation", has with somewhat dubious judgment sought to compare the author with the John Erskine of *The Private Life of Helen of Troy*, there is no question but that Mr. Heinlein has achieved a clarity of detail in writing of the future that gives his stories the stamp of an all-too-realistic present.

The title story, about Rhysling, the Homeric blind Burl Ives of interstellar Odysseys, is one of the most powerful emotional grapples stf has yet produced. And if the long concluding novella, *Logic of Empire*, seems at first to be space opera pure and simple, we suggest you reread almost any of its paragraphs for fine characterization, incredibly thought-out logic of little things, solid good writing. In fact, you can reread the whole volume with no pain whatsoever. It's that good a book.

* * *

SHIP OF DESTINY by Henry J. Slater, Thomas Y. Crowell Co., New York (\$2.75).

This novel of a great ocean liner that survives a cataclysmic storm to find itself apparently the sole human haven on a world inundated by a

second Flood will strike a reminiscent note with most serious science fiction readers. It is, in fact, a sort of lower-case redoing of S. Fowler Wright's famous *Deluge*.

It has a certain logic in its more catastrophic elements. Yet, there is an overpat statement of human reactions to disaster that seems to have been culled from some thousands of Hollywood B-pictures, if on a slightly more cosmic scale. In short, the characters are cut from stencils in two dimensions, and this reader at any rate consequently found them hard to credit with reality. Furthermore, the solution is based almost entirely on a combination of bull luck and British bulldog courage, and character of the *Admirable Chrichton* school long since outmoded in modern American science-fiction circles.

* * *

WHO GOES THERE by John W. Campbell Jr., Shasta Publishers, Chicago (\$3.00).

This is a reprint, though listed as a second edition, of a collection of Campbell stories first published some four years ago, said reprinting apparently being based on the inclusion of the short novel *Who Goes There*, which as almost everybody knows was the basis of that 1951 movie called *The Thing*. At any rate, this fact is highly blurbd on the jacket cover.

The stories, outside of *Who Goes There?*, include, *Blindness*, *Frictional Losses*, *Dead Knowledge*, *Elimination*, *Twilight* and *Night*. All of them pack plenty of punch, both in concept and development. All in all, a happy idea all around.



EXPLODING GHOSTS

By Salem Lane

THE SHADOW-WORLD of nuclear physics has numerous surprises. Everyone is familiar with the standard basic particles of atomic science, the electron, the proton, the neutron, which are so positively identified that there is no doubt at all of their objective existence. These three can be measured, weighed and handled just as if they were marbles in a plum pudding.

But there is a secondary, intra-atomic group of particles which defy such analytical techniques and which have been discovered by a blend of theorizing and observing. As strange as any of these mysterious entities is the "neutrino", a minute subatomic particle which possesses neither rest mass nor electric charge! It does possess, however, great energy. This is like saying there is a man standing there whom you can't see or touch, but he's loaded with power! The point is the neutrino evidences itself on the photographic plate and it is capable of passing through anything. Generally it is associated with cosmic radiation effects, like the mysterious mesons whose properties

are almost as vague.

Recently the positrino has been discovered by Champion and Ahmed, two British physicists, who find that their discovery is only a little less mystifying than the neutrino. The positrino has no rest mass either, but it does possess a unit of positive charge!

The positrino was discovered, of course, like so many atomic particles in the Wilson cloud chamber where its track was like that of the electron, but curved in the opposite direction. Applying interpolation and extrapolation, the scientists could only reconcile the existence of the particle within terms of a so-called positrino possessing the unique properties of that ghost-like evasive thing.

Work with neutrinos and positrinos is fundamental research of the first order, potentially a great deal more important than the widely publicized work of the straight "atomic" scientists, for these discoveries will eventually lead, we hope, to an actual understanding of what constitutes matter, a truly difficult problem indeed.

The more physicists probe into the core of the atom, the more like an "Alice In Wonderland" sort of world it seems, with ordinary logical laws suspended and straight reasoning abandoned. How fantastic it is to imagine that there can be a particle which doesn't exist when it is at rest, but has gigantic energy when it is in motion! That statement seems like an obvious contradiction, when in reality it is simply a statement of observational fact. You leave intuition at home when you investigate the atom.

There may be some connection between the neutrino and the photon, the basic unit

of light. The photon too has no rest mass, but possesses tremendous energy by virtue of its speed, which is, of course, the velocity of light, three hundred thousand kilometers per second. Stop a photon of light with matter and you get some explosive results, such as the ejection of an electron from the matter. But as to how the thing happens, your guess is as good as the next man's. Atomic physics is no place for a realist, for an "I'm From Missouri" type; you've got to have an almost medieval, religious faith in the behavior of this never-never world!

* * *



DEATH IS NOISY

By WILLIAM KARNEY

THE WORLD-WIDE attempt to make a weapon of waves—waves of sound, heat, light, or what have you—has not been, to judge from the general debunking of such things, very successful. And wherever "death rays" of any sort have been described (as, for example, Xrays) it has always been necessary to use them in virtually direct contact with the victim. You can kill a human being with the world's most powerful Xrays only if he's within comparatively close range. The sum and substance of rays thus doesn't appear very promising in terms of lethal weapons.

Scientists, in analyzing the problem of using rays to induce death in living things, realize that lethal radiations are not feasible for a long time to come, at least until more is known about generating and focusing and concentrating waves of sufficient intensity. About the only single field that seems to offer any hope of a practical "ray-gun" or "ray-weapon" is supersonics.

Supersonics researchers are investigating this field intensively, and the situation looks surprisingly promising. A General Electric Company development can well illustrate the potentialities of the supersonics technique. A small inaudible whistle producing supersonic waves of about twenty-five thousand cycles per second can be located at the focus of a parabolic headlamp reflector, and the resultant focused sonic energy can ignite cotton in mid-air, cause mice and rats to writhe and die, permit cork particles to float in mid-air, and in general conform with the mental stereotyped image of a legitimate lethal wave!

This sonic method can be modified to use great power by employing a powerfully driven whistle, so that a beam of great

intensity einerges. The success of such a device as a death-inducer has been surprising, and so gratifying that hush-hush wraps are going around it.

Periodically, private inventors announce that they've made a sonic death ray but, invariably, testing shows that they've missed the boat, essentially through the lack of power that bothers the more orthodox technicians. Since supersonic waves are generally produced by vibrating crystals or vibrating iron armatures, the violence with which these devices can be made to agitate themselves without shattering is limited. Therefore the sonic power output is limited also. Once this is overcome a deadly death ray is perfectly feasible.

The study of jet engines and rocket motors has involved the production, unwittingly, of large amounts of audible and inaudible sonic energy, and already scientists are looking to this source as a possible power source.

While the Military are naturally interested in any potential death rays, it is well to note that the possibility of the selective properties of supersonics makes it ideal for vermin destruction and sonic "crop-dusting". Insects are particularly susceptible to the shattering destruction of supersonics because little energy is needed to shatter their small frames. Thus sonic death rays on a practical scale will undoubtedly appear first in a battle against the insect world. In sterilization processes, too, as of bacteria, sonics will prove useful.

As a weapon against human beings, sonics—at this writing—has a long way still to go. But, with the discovery of enough power, this could change overnight!

THE READER'S FORUM



THE MAN WHO HAUNTED NEWSSTANDS

Dear Sirs:

I have finally gotten down to writing you a letter after having written several before and tearing them up. I am truly no literary expert.

I have read your magazines now for two years and after comparing them with other science-fiction magazines such as *ASTOUNDING*, *GALAXY*, *AVON*, etc. (and these are all excellent mags), I find that I truly haunt the newsstands most avidly for AS and FA. However, some other fans will probably disagree with me, and I don't blame them, because I am no literary judge.

It just makes me sick to hear all of these people griping and groaning because they don't like this or that in a story. One or two of them might be well qualified to do this, but most of them are just like me, and, believe me, that is pretty poor. For that reason, I am not even going to try to give my opinion of the stories in AS, FA, or any magazine, for that matter.

There is just one thing, however. That is in the September 1951 issue of *AMAZING STORIES*, on page 13, the last column over, about half way down, the author is describing Stuart Case. He says, "Stuart was a broad-shouldered lad with a shock of red hair", or something very similar. In any case, it mentioned red hair. What happened to the poor boy's hair on the cover? It's black.

What I'd like to see in *AMAZING STORIES* or *FANTASTIC* is a few stories about such things as conquests or some rip-roarin', shootin' wars.

I hear there is a new movie out, and I also hear it's going to be an excellent one. It is called "When Worlds Collide" by Balmer and Wylie. I've read the book and I loved it.

Is it possible that some fan could let me know if he has a February 1951 *AMAZING STORIES*? I wish some one would. I would be glad to pay well for it. That is the only AS I've missed or have not read in two and a half years. I, like a fool, threw away my copies when I was through with them. Now I'm buying them back from various sources, and I lack only February 1951.

Well, I guess I've taken up enough of your time, so I'll sign off. It's fun read-

ing such fine mags put out by your people.

Joseph C. Baldwin
Post Office Box 51
Scarsdale, New York

We know of no more valid reason for buying magazines than the fact that you like what's inside. No publication can hope to please everybody; our efforts are toward pleasing a great many...and, modestly, we're doing so!... Since we have no supplies of back copies, some sympathetic fan will doubtless supply you with the issue you want.

—Ed.

NO PLACE LIKE HOME!

Dear Sir:

I would be glad if you would publish this in your magazine as soon as possible. I have a small collection of science-fiction and fantasy magazines, but I understand that some of them are scarce, such as stories by Richard Shaver, A. Merrit, George Allen England, Rider Haggard, etc. I also have some more recent numbers which contain the present-day "greats". I will be willing to sell all of these at reasonable prices. Practically all of them have front and back covers and are in fair to good condition.

It is now about 15 years since I first started to read your magazine and, while I have never forgotten the thrill of such stories as the John W. Campbell "Arcott, Morey and Wade" series, I believe that sheer excitement and novelty are compensated by superior technical knowledge in present-day writing. The imagination was always in evidence.

I am writing to you rather than to one of the many other magazines in the field because I believe that the people who write letters to you are among the better type of fan, and it is to them that I wish to speak. As I have magazines to sell, I would rather that they went to "a good home".

Peter E. Nicolls
326 West 10th Street
Pueblo, Colorado

Make out the adoption papers, Pete; your children are sure to find a 'good home!'

—Ed.

HOLD BACK THE FLOOD!

Dear Howard:

I'm writing again, for a dual purpose this time.

I would like to thank you sincerely for publishing my letter in regard to buying back issues of FA and AS.

I've received many letters with wonderful offers. I've taken advantage of the few that I could, intending to purchase the rest, as I received the letters.

Now I have a problem! My family expects to be moving very shortly. We have so many things to move, that any additional mags would be a real hindrance, because of their bulk.

I just wanted to thank everyone who has written me, and I promise, as soon as we are settled, I will answer each and every one of you. Thanks a million.

And now for the latest ish of AMAZING. "The Golden Gods" pulls down the first place, with "Master of the Universe" following close behind, because of its novelty. The rest claim third place—I can't choose between them.

This seems to be getting pretty monotonous, my always praising the stories, never criticizing. But that's the kind of monotony I love.

Once again, Ed, let me thank you for publishing that letter.

I'll be looking forward to that new FANTASTIC.

Jim O'Brien
Post Office Box 145
Haskell, New Jersey

We're kind of fond of that sort of "monotony" ourselves, Jim.... The new magazine FANTASTIC has been on sale only a few days as we write this; and the response has been so staggering that we can hardly believe our ears and eyes! Letters are coming in from people who tell us FANTASTIC is the first magazine of science-fiction and fantasy they've ever bought, or read, and that it has opened up a whole new world for them—one they intend to explore fully.

—Ed.

NO DEATH KNELL AUDIBLE

Dear Mr. Browne:

I noticed that in your table of contents for the April issue of AMAZING you have two 10,000-word stories. One is listed as a short, the other as a novelette. Upon what basis do you judge? If O. Henry had penned a 50,000-word story, would it still be a short story?

Am glad to hear of the new digest-size FANTASTIC, and presume it sounds the death knell of the "old" FANTASTIC ADVENTURES. However, as a fine-arts major, I think it was sorta a dirty trick to mention that you were going to have a modern masterpiece of fantasy on the back cover and then neglect to mention the name of the master. You, uh, did

know the name, didn't you?

Tell me, what does the L. E. stand for in Editor Shaffer's name? Yes, I noticed the picture on the inside front cover, too.

In hope that the new FANTASTIC will live up to the standard set by FA and AS (we'll forget that little incident that started back in '47), I am,

Respectfully,

James G. Jones
484 West 3rd Avenue
Columbus 1, Ohio

Why show you all the cards in our hand? We wanted you to go out and pick up that first issue of FANTASTIC and see for yourself who painted the magnificent back cover—the theory being that once you picked it up you'd put down 35c in its place!... Fantastic Adventures is still with us and going strong, and we expect to keep it that way. —Ed.

INVITATION

Dear Editor:

I am writing on behalf of the LIVERPOOL SCIENCE-FICTION SOCIETY in the hope that you will see fit to print this letter in the Reader's Forum of your magazine.

We are a comparatively recently formed society and have a private club-room, "The Space Dive", at 13A, St. Vincent Street (back of Lime Street Station), Liverpool, England. We hold one regular club night per week, Mondays at 7 p. m., and usually there are about twelve to fourteen sf fans present. As you can see, we are a small club—but we have big ideas!

The U.S.A.A.F. have a base at Burton Wood, about 15 miles from Liverpool, and we want to extend an invitation to any sf or fantasy fans stationed there to visit us at the above-mentioned premises any Monday night that they can manage to come along. Call it Anglo-American friendship or just plain cagerness to meet American fans.

Let us assure them that they will be given a very warm welcome indeed and it will give them a chance to meet English fans on their own ground.

By the way, if any Merseyside readers happen to see this letter—well, the invitation most certainly applies to them as well.

Thanks a lot.

David S. Gardner
63, Island Ross
Liverpool 19, Lancashire, England

INFORMATION WANTED

Dear Mr. Browne:

I have been an avid AS and FA fan for years, but this is the first time I have had occasion to write. I need some help that only your readers can give me, so I hope you can find space for my first effort.

Is there a collector in the general area

of Providence, Rhode Island, who has the AS mag from 1939 on? If so, would he please contact me by post card? Also, does anyone have Dick Shaver's address?

Now, back to AS and FA—I have read most of the stf mags on the stands and I don't think any of them compare with AS and FA. I enjoy your stories and also the illos, but I would like to see some more of Shaver. While I was in the Navy in World War II, I had copies sent to me from home so I could keep up with the new trends in stf.

As for my ideas on story length, please keep the long ones in AS and the shorter ones in FA.

Hoping to hear from some of you soon, I am,

Donald Chivers
19 Ash Street
Riverside 15, Rhode Island

HEY, SERGEANT CHERRY

Dear Mr. Browne:

The arrogance of some gentlemen in your re-reading audience simply appalls me. Why, in heaven's name, a man should set himself up as judge and jury on my reading material, I cannot understand. Concerning T/Sgt. Warren I. Cherry's letter to you, condemning a masterpiece by one of America's favorite authors, Mr. Cherry considers his book about a certain piece of land to be filth. This is decidedly, most assuredly, most pointedly (in fact I want it understood) not so. The author of this book has endeavored to (and successfully) state in readable, comprehensible, enjoyable form the actual, true-to-life state of affairs in this section of the country at the time the story took place.

Mr. Cherry, if you want to band together a citizen's committee that will really do some good, then get them to do something about the conditions behind the book, not the book itself. You certainly would not throw your favorite relay pump through your video screen simply because you didn't like the actor at the transmitter, would you?

Jesus Christ did not hold his tongue at some point where He thought He might injure the feelings of some one in His effort to better the conditions of the world, and I don't think any man should, either. I'm sure, Mr. Cherry, there are many with my feelings on the subject and, if you really have plenty to say, then you'll get plenty of response from your readers.

As for your mag, Mr. Browne, there I do not differ with Mr. Cherry. Yours are the best in the field. I like especially your shorter stories. Many of your readers go to work early and come home late. Know what I mean? With me your stories in March '52 rated in this order: 1) "Throwback", 2) "Strange Blood", 3) "Queen of the Floating Island", "Grey Legions" and "Land Beyond the Lens" tied for fourth, and I enjoyed your features greatly. I always read them first.

Mr. Browne, I have sort of a mathematical mind, in a very amateur way. I would like very much for you to publish, just this once, the word rate paid for your stories in the issue in which you run the stories. I like to know how much of my quarter each author gets.

James C. King
338 Washington
Memphis, Tennessee

Your last paragraph holds a pretty startling idea, Jim. Authors are funny people in many respects; in this one they wouldn't want it known if their rates were small—and they wouldn't want it known if the rates were large!

—Ed.

PORTRAIT OF AN ANGRY MAN

My dear Mr. Browne:

It burns me up to see members of a minute minority criticize a zine of such merit.

Are you going broke? If so, you must be crazy not taking the advice of the renowned one-man circulation bureau, namely, Mr. Edward Joseph McEvoy.

Now, think. Don't plates cost an awful damn lot? And too much more for color plates, not to mention another press run in a different color? So you'd profit by making previews in color.

Hasn't it always been your policy to print any worthy letter, no matter how critical?

Now we have the first-prize grand bombo dingamawuhucchy of the century. Get rid of the Club House! Ha! Otherwise from saying that this was the product of a (censored).

"...a minimum of ads..." He doesn't like Ziff and Davis, either. Cutting off much of their income.

Please, I beg of you, please do not print any letters containing "cute" items from diminutive minds, or letters in which minds of equal calibre show how much they don't know, brag, etc.

Liked your notation on the end of McEvoy's letter.

Henry Oden
2317 Myrtle Street
Alexandria, Louisiana

Mr. Oden's opinions are his own and do not necessarily reflect those of this publication or its editors. We said "necessarily".

—Ed.

NOW, HERE'S HOW IT HAPPENED...

Dear Editor:

The advertising banner on the May 1952 issue struck me. A NEW ROG PHILIPS NOVEL. Even though I had just about sworn off AMAZING I bought a copy if for no other reason than old time's sake.

It's like this. One day in June I went into a soda fountain (the year, let me add, was 1947) and was killing a little time. The proprietor was giving me dirty looks (I was leafing through all the maga-

zines) so I bought a copy of the August 1947 issue of AMAZING STORIES.

That contained Phillips' "So Shall Ye Reap". That was my introduction to science fiction and to Phillips; I've been having a grand time ever since!

After that I got interested enough in the Shaver Mystery to go back and buy all the back issues from 1945 onward—and including that wonderful series that L. Taylor Hansen wrote. Is there any possibility of getting anything more from Mr. Hansen?

I was really surprised, in the latest issue, to see a cover by Lawrence. The scene hardly rates immortality in color, but it is by Lawrence and that can lead to very fine things.

I have one complaint with AMAZING. There was a time when AMAZING was the home of the long novel. Well do I remember "Empire of Jegga" (90,000 words), "Gods of Venus" (86,000 words), "The Star Kings" (70,000 words), and "The Green Man" (82,000 words). And even you were responsible for some of those. You wrote "Forgotten Worlds" and "The Man from Yesterday". Why can we have something long—something memorable—in THIS day and age? Fifteen and twenty-thousand-word stories are not satisfying. Give us something with length and breadth—something with space to move around and develop in—give us a science novel! PLEASE.

And (if you're kind enough to publish this) will you mention the Philadelphia Science Fiction Society, a club whose members include L. Sprague de Camp, Alan E. Nourse (a new writer, but a good one), and various fans, publishers, and characters? If anyone would like to see us in action they are invited to drop me a line and I'll send them a copy of the club bulletin, the PSFS NEWS listing future programs and meeting dates.

And (speaking for myself) I'd like to buy Edgar Rice Burroughs' *Back to the Stone Age* and *Jungle Girl* (the only two books I need to have all 57 of ERB's books).

Best regards,

Dave Hammond
806 Oak Street
Runnemede, New Jersey

The long novel vs. short novel controversy, if that's the word, was pretty thoroughly fought out on these shores recently. The majority of our readers said "Long ones now and then but not too often." So we tried out the "duology" idea (two 30,000-word stories about the same characters in successive issues) and it went over big!... After a lapse of several months, during which he sweated out a bad slump, Rog Phillips is back to producing stories—stories better than he's ever done before!

—Ed.

RIGHT TO THE POINT

Dear Ed:

"Master of the Universe". Tell me what

you think, not what AMAZING STORIES thinks about it.

Did you read the March 22 issue of COLLIER'S? WOW!

This is my first letter, as I don't like to write, but it's about time I did.

The stories I liked best in the May issue are "Empire of Women" by John Fletcher, with "The World of Whispering Wings" by the one and only Rog Phillips a very close second.

Third is "Monkey in the Ice Box" by Gerald Vance.

"Come to Venus—and Die", by F. Willard Grey, last. Is that what happened to the story?

All in all, whatever that means, the issue was O. K.

Only one trouble with the front-cover painting. What happened?

Where in the story "Empire of Women", pray tell, did it say anything about someone being hit by that contraption on the cover?

I'm 16, and if anyone wants to write me—don't.

Darrell Ewing
10929 Burin
Inglewood, California

But, Darrell, we ARE Amazing Stories! And, as such, we've told you our feelings about "Master of the Universe." ...At least it WAS an interesting contraption, wouldn't you say?

—Ed.

YOU WANT 'EM—WE GOT 'EM!

Dear Editor:

I have been a reader of science fiction and fantasy for many years and it has afforded me many hours of pleasure. The Ziff-Davis publications have always been tops. Of course there were clinkers as far as stories are concerned. But then aren't there always? As a consequence of years of relaxing entertainment I have an accumulation of science fiction and fantasy magazines and, with Spring cleaning upon us (the wife and me, that is), we would like to reduce our inventory. We have hundreds of magazine dating from 1946. Anyone interested in having back copies in excellent condition, please contact us with your offer and needs. If we can help you, we would be only too happy to do so. Thank you for an enjoyable time through the medium of sf and fantasy.

Joseph A. Piechuta
115 Willow Street
Meriden, Connecticut

WHADDAYUH MEAN—"SERIAL"?

Dear Mr. Browne:

My subject of writing is this new "fiction" feature you're now carrying in AS. Whatta sneaky way to get in a serial! What are you trying to foist off on us fans now? Of course you know I'm speaking of that thing called "Master of the Universe". I think that if you're gonna put in a serial you should call it that, in-

stead of "Short, 5000, Author Unknown", as you have been doing.

Now, about your February AS editorial, I just about blasted away at you then, Mr. Browne, but, by some freak of nature, I was able to hold my terrible temper. That was a nice job of squeezing out of it you did in the May editorial, though!

However, Howard, old boy, have no fear; me and AS are still friends. I've seen AS through thick and thin (mostly thick) for close to four years, except for a period when your mag went so low, I got disgusted and burned my whole collection. I've just recently started to rebuild it.

Enough of my biography! On to business. Not having read the stories in your May issue yet, I won't bother to discuss 'em. But that cover! If that is what Lawrence's H.N.B.'s do to a guy, I ain't gonna have anything to do with 'em! (Ah, I see you have one of my favorites, Finlay, back!)

Ah, yes, before I close, there's one other thing. This Bill Tuning is somewhat of a thrill-seeker, isn't he? It's just as you say Bill, get out on the front, and you'll cure your taste for battle!

This missive is getting a little long, so I'll close.

Ray Thompson
410 South 4th Street
Norfolk, Nebraska

We didn't squeeze out of anything, Ray; we just got told off loud and long and we sort of recanted a little. It's not the first time readers have come at us with axes swinging; so far we've been able to duck in time! —Ed.

ALWAYS FEED THE ARTIST!

Dear Howard:

Seeing my letter printed in the May "Reader's Forum", I decided to send another one to you to clutter up some space. This one, though, unlike the previous one, will not have the year's ratings but, like the other one, it will rave about that wonderful cover.

Wonderful! Why, it's marvelous!

I have a queer suspicion that you feed Lawrence some new type of cereal—and I don't mean Wheaties. His colorings are terrific and his dames are some dishes. If he keeps that up he might even draw dames like Bergey. I doubt it, though. Bergey has a certain knack with fems. And since I'm speaking about Bergey, why not some of him?

"Empire of Women" was fair. Nothing that I could rave about but also nothing that I could weep about. Pretty good. "The World of Whispering Wings" is a different story. This is one of Rog's best, and he has written some terrific ones, too.

So...hmmmm...Wilcox is writing a sequel to "The Giants of Mogo". Maybe by the time this letter is printed it will have been featured. Maybe it's in this issue! Really, I can't wait to read it. I'll prob-

ably be prowling the corner store till it's printed. Another thing is that it'll be as long as is warranted. Hope that it's about 50-70,000 words.

Speaking about Wilcox, he didn't use any bird men in his last story. What happened? Well, when I come to think of it, it wouldn't have been logical to see birdmen trying to knock off the robots. Probably have a few of them in the sequel. They should be in the sequel. They were some of the main characters in "The Giants of Mogo".

Now about the "Master of the Universe". So far it's good. The only thing wrong with it is that it gets tiresome looking down at the footnotes every paragraph. Reminds me of ancient Greek manuscript, where the translator explains what the writer meant at the end of every sentence.

Before I end this letter I'd like to say to the readers, why don't you subscribe to my zine? It's good, and my co-editor and I are planning to make it one of the best. We can't do this without material and subscribers, so why don't you send us a dime for it? You amateur writers could send us some material, too. In the not too long future we are planning to have some contests and the best will receive some money. This isn't too certain, though, and can only be done if we have about 300 readers. At the present, our circulation is near 100 and my co-editor and I are starting a big drive for subscribers. Send in for your subscription today and you'll receive a fanzine that is going to be one of the best. All subs go to:

W. Friesberg, 5018 West 18th Street, Cicero 50, Illinois.

Material you can send to me or to Warren. Come on and help us make a great zine!

Joseph Semenovich
40-14 10 Street
Long Island City 1, New York

Actually, we don't feed Lawrence anything. We just give him his money and he rushes out and buys a grocery or something.... The Wilcox sequel to "Mogo" hasn't reached us yet; he's busy writing for television at the moment. But it's on the way! 60,000 words, in two consecutive issues, is the way we plan on presenting it. Okay?

—Ed.

BUT HANK—NOT EVEN ONCE IN A WHILE!

Dear Howard:

Well, it was bound to happen. The return to sexy covers. AS Started its 26th year in fine style with a good Saunders cover. In February AS sported a robot cover by Lawrence. In March we had a fine cover by new artist Barye Phillips. This was the best of all covers so far in '52. In April another cover by Phillips. The second wasn't too good. The girl wasn't like the girl in the story. The gold-

en robot body was supposed to be sexless, and he looked like a him. Now in may we have the same old thing. A gal, with her blouse in shreds, pushing the villain. Tut! Nothing in the story to illustrate that point.

The stories have all been good. I have no favorites as yet.

Of the stories in this, the May ish, I thought "Empire of Women" by John Fletcher the best. "Monkey in the Ice Box" by Gerald Vance was very good humor—no slapstick. Has the makings of an enjoyable series.

You don't want to say that "Master of the Universe" is real, eh? Well, I don't think that some author would leave a ms. in some lonely place in a strange box which could hardly be opened. If we accept your story as to how the ms. was found, then we must also believe that it is fact, not fiction.

The features were good, solid stuff, with the Club House on top of the heap—as usual.

Bill Tuning—now you have Rog Phillips gunning for you. Better send Sam Mines your address before he has to hire another warehouse to keep your mss. in.

Illos—The one on page 8 was overinked. The Finlay and Lawrence were not too good. Valigursky was good—as usual, but why did you use the same illo for MOTU? I thought Beecham's the best. So good, in fact, that I want to know how I can get the original. How?

Good—hear that you have given Don Wilcox free rein on a sequel to "Giants of Mogo". Here's to a great, great story.

I still don't like the headings for the departments, as I have said before. But I have become used to them, and now I can tolerate them—a little.

LES mentioned that both AS and FA would have some announcement on reprints in their May issues. I couldn't seem to find any such thing. Maybe because there was none to find in the first place.

You have a good mag, How. But then people have been saying that for the last 26 years, so it is no revelation, is it?

Good luck with the new FANTASTIC. And may we soon have a fourth companion to square out the bridge group. Something to do when you are not busy.

STFanatically yours,

Henry Moskowitz
Three Bridges
New Jersey

You didn't miss much, Henry. And that's the way we like it!

—Ed.

FOR THE WHOLE FAMILY

Dear Editor:

I've been dying to write but I just couldn't find your address. Why don't you print it at the beginning of the Reader's Forum each month?

I started reading AMAZING about 5 years ago. I am now 15, and I don't see where your covers have corrupted me in

any way. Personally, I like them as they are. A little of everything. But why don't the women have space suits? Or are men so weak and women so strong? Remember, there's no air in outer space so far. Your inside illos are steadily improving. They really illustrate the story. I think that Virgil Finlay and Lawrence are two of your best, and they're accurate. Rod Ruth and Valigursky aren't so bad either.

I like all the stories you print usually. My whole family read AMAZING and pass their opinions also. I like the short articles, and the short-short stories. Here are some stories that I think need sequels: THE STAR KINGS, ALL HEROES ARE HATED, and WHO SOWS THE WIND. THE STAR KINGS left me in the air, sort of breathless. ALL HEROES ARE HATED made me want to find out what happened, and the same for WHO SOWS THE WIND. Oh, yes, THE LAND BEYOND THE LENS needs a sequel also.

I wish you'd print some more of Shaver's stories of the Deroes and the Elder Race. I also liked Rog Phillips' GODS OF VENUS and sequel TITAN'S DAUGHTER very much. STARSHIP FROM SURIUS was good too. I like space stories, not down-to-earth ones. Could you manage to print an article on the flying saucer? I'd like to hear more of them.

Angela Salmon
1 Duke Street
Montego Bay
Jamaica, British West Indies

BOMBS AWAY!

Dear Editor:

I never thought that I would be the one to write a letter to an Editor, but there some time comes a time that it is necessary. If I had let this slip by I would never have been able to look myself in the face again. What causes all this, you ask? Well, brother, when you went along with Model T science fiction written by "Hot Rod" Adler, the Cadillac Kid, I found that I had all I could take and that is a lot.

I have been reading all types of sf ever since I can remember. I have a rather large collection, some of them dating back as far as 1918. Among these are the greatest stories that were ever written

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and by the best authors. There is no second-rate stuff among my collection. If it is good I keep it, and if it is tripe it goes in the waste-basket. I believe this is the best system. I read all the stories I can find for pleasure and not to have something to gripe about to the fellow who wrote them. I said I read for pleasure, and I really mean that. Some of the fellows who send in letters to you are always looking for mistakes. (Authors are human and do make a few. That goes for editors, too.) If I was the guy who went right down to the wire on each and every story I never would get a bit of pleasure from my reading.

I have seen many changes in the staff and new names come and go. Authors come and go. Some I couldn't remember and some I'll never forget. I've seen in the past 12 years a good magazine go up and down in the stream of good reading. Yes, before the war it was AMAZING, and it meant what it said. Then it got war-scare, and has been that way, with few exceptions, ever since. All stories follow the same battle-scarred line. A lot of the classics never had this theme at all. Maybe that is why they are among the classics today. Of course authors who sit in fear that an A-Bomb is coming down the drain and will blow them sky high will never be able to write anything but blow-'em-up stuff. Can't something be done to stop this? How about another magazine called WAR IN THE FUTURE and put all their stuff in it? Think it over.

Now I'll just tell you some of my favorites just to give you an idea of what I think is AMAZING, STARTLING, FANTASTIC, etc. They are all from sf mags:

George Allen England, A. Merrit, Richard Tooker, Austin Hall, Henry Kuttner, John Hawkins, Margaret St. Clair H. G. Wells, Paul W. Fairman Kenneth H. Casens, Ray Bradbury, John McGreevey, Rog Phillips, W. B. Ready, Clyde Woodruff, Nelson S. Bond.

Please don't think this is all of them, but if you'll note these are not scared of A-Bombs and can still write the real stuff.

As for the covers, I like them with or without (referring to females), but I buy with my eye on the authors rather than the dames. I want to have something to read rather than howl at.

In closing, I'll say this letter is to you, and whether it gets into print or not makes no difference to me. However, I only hope you'll think it over and remember the Model T is still around and still pulling some of these newer cars out of the mud now and then. So are the classics, and they are still selling magazines that would be on the shelf if they didn't have a classic in them now and then. After all, fellow, Grandpa might not be a rug-cutter or a hot-rod operator, but he sure didn't make a mess of things when he drove his Model T, and he never tried to sell a lemon to someone who didn't want it.

Okay, Browne, I'll let up and just say do the best you can with what you have and keep telling them authors they're safe from super attacks and maybe they will get out some good stories.

Here is a list of the best stories I know of, both old and new, from all magazines of sf, etc.:

THE DAY OF THE BROWN HORDE,
Richard Tooker

THE ELEXIR OF HATE, George A. England

A HANDFUL OF DUST, Ivar Jorgensen

ALIAS ADAM, John McGreevey

ARK OF FIRE, John Hawkins

DAWN OF FLAME, Stanley Weinbaum

VALCAN'S DOLLS, Margaret St. Clair

THE SILVER PLAGUE, Clyde Woodruff

THE VISITORS, Rog Phillips

THE DOG WITH THE WEIRD TALE,

Paul W. Fairman

THE SECRET OF GALLOWES HILL,

Paul W. Fairman

DEADLY CARGO, ditto

STRANGE BLOOD, ditto

Please keep Fairman away from those atom-bomb worry-warts, for he's doing a wonderful job of keeping AMAZING and FANTASTIC worth reading.

J. F. Carpenter

1104 13th Street

Parkersburg, West Virginia

Judging from your letter and the stories you rate best in your years of reading science-fiction and fantasy, it would seem you prefer fantasy to science fiction. That's fine, and we'll see that you get plenty of good fantasy from our pages. But even in the sf stories we run, there is no overwhelming ratio of bomb explosions. We still place the accent on humans and their problems, and if the heavy artillery gets dragged in now and then, it's there to add to the problems of the characters and not just to get in a lot of noise...

—Ed.

KILL THE CLUBHOUSE?

Dear Editor:

I have been reading sf for about a year now and have bought most of the magazines put out at one time or another. I have always bought AS.

Since you leave yourself open to criticism in the "Reader's Column" I will make some.

The covers I do not care about particularly; however, I will say that they are no worse and no better than any sf covers. There is only one mag who has better—GALAXY.

Someone brought up the point that the Clubhouse is a waste of space. Personally, I don't even glance at it. Of course others do, else you would not include it in the mag. How about asking the readers and get their opinion? I would suggest that you shorten it, anyway. No one can go

through all books, etc., described in it.

Why not lengthen the reader's column? The past few months I've noticed it has become shorter. Is this lack of space due to reader apathy or poor letters?

Unfortunately, I was not able to get all last year's issues, but of those read, the July issue's feature, "We, the Machine", was far and away the best. Of the shorts, the same issue's "Good Luck, Columbus", and April's "The Last Touch of Venus" ran neck and neck. There were other very good stories which I won't mention because you know them yourself, also, there were some almost pure space operas which were very poor, and again, I suspect you've learned of that from your readers.

AS is the best mag in the 25c field, there is no doubt about that, but there are also some other good ones. It can't be compared with any of the 35c mags, not because it is either poorer or better, but because they are so entirely different.

Here are some changes I would like to see:

- 1) A few serials, such as the Lens series
- 2) A little longer novels
- 3) Keep the short stories
- 4) Lengthen "Observatory" and reader's column
- 5) Shorten or abolish "Clubhouse"

Footnote: "Master of the Universe" is very interesting. Very clever idea!

Saul Berman
501-13 Avenue E
Calgary, Alta., Canada

For the first time since Amazing Stories added a department for fanzines, letters are suggesting the feature be eliminated. So far, the ratio has been negligible, but each month a few more letters make the request. We hope this trend does not grow to the point where something has to be done about it. In the first place your editors enjoy looking over the amateur publications. Also many of them have stated that the Clubhouse was largely instrumental in drawing enough subscribers to keep the fanzine going. Too, Rog Phillips, who is probably the strongest supporter of fandom and fanzines in this country, would get out a couple of howitzers and start gunning for us if we tried to do away with his column. —Ed.

FIRING SQUAD FOR ARTISTS

Dear Mr. Browne:

Aw, come on, Howard, get on the ball. Your artwork has hit a new low. Why don't you toss out all your artists and use all Virgil Finlay illos? Or, better yet, get some Cartier pics. You haven't even had a good cover in months, with a few exceptions, of course. The May cover was especially lousy. Let's see some improvement.

"Empire of Women" was good, but not as good as other 30,000-word "novels" that you've printed before.

Couldn't see much point to "Come to Venus—and Die". Couldn't see much plot

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either. Lawrence did a pretty fair job on the illo.

The best story in the May issue was "The World of Whispering Wings". Rog Phillips did a good job on that story, though it wasn't as well written as his "The Mutants", which had the same wordage. Virgil Finlay's illustration for this was, in my opinion, the best in the whole mag, including the cover.

"Monkey in the Ice Box" was the worst story in the May issue. There was absolutely no plot to it.

Now we come to your "article". The second part of "Master of the Universe" was very interesting. I like the long footnotes; keep 'em. My only complaint is that the installments aren't longer. Why don't you chop out stories like "Monkey in the Ice Box" and stick the extra on your "article". If "Master of the Universe" is true, old AS has scooped the history books. If false, if it is still the most interesting feature of your mag, including most of your stories.

Also worthy of mention is your short feature "Make Your Own Cloud Chamber". Guesz I'll have to make me one.

The Club House and the letter column were very good, as usual.

I've got for sale **TRIPLETARY, FIRST LENSEMEN, and GALACTIC PATROL**, by E. E. Smith. Also **JOURNEY TO INFINITY, OMNIBUS OF TIME, TREASURY OF SCIENCE FICTION, and SILVERLOCK** are for sale and are in mint, once-read condition with dust wrappers. Will trade for '46 or '47 aSF.

Gary Pickersgill
Box 270
Sheldon, Iowa

Firing all artists except Finlay would get us on the ball, all right—the eight-ball! Sure, we think he's tops—but if a guy who likes chocolate eats nothing but chocolate, the time's going to come when even spinach will look good!

A NEW CONVERT SWEEPS CLEAN

Dear Editor:

I am a new sf fan, so I thought perhaps you would like to know what a new fan thinks of your mags. They are wonderful! I have never read anything I liked so well as sf. I first became an sf fan when I borrowed a book from the library called "A Treasury of Science Fiction", by Conklin. Since then I have read hardly anything but sf. I have become so interested in sf that I have written nine of my own. My friends say they are "pretty good".

I want to put my two cents' worth in that stale old debate about the type of art in your mag. I think you know what kind of art sells in a book best, so you should try to use that type more often. I don't know what type sells best, because I buy a book or mag for the reading material, not the pictures. I think that if a person were truly interested in sf they noticed whether the mag had pictures or not. I must admit, though, some of these

pictures are very unusual. As for the grade of paper you use, it's poor, but it will do. I am sure no one could disagree with me about these things.

I have never read an sf story that I did not like and enjoy. Some stories I have read as much as two or three times. I believe my favorite story is "The Pyramids from Space" by Barry Cord. This story was illustrated nicely by Kiemle. Authors: Phillips, Cord, Vance, Chandler and Fletcher are tops.

Now I have a request to make of my fellow fans. Since I am a new fan I have missed a lot of your sf mags. If anyone would care to send to me some copies that they did not want, I would be most grateful. I would like to read as much of this wonderful stuff as I can. I am eighteen years old and would like to correspond with other fans my age. I hope this letter is printed, and my grateful thank-you if it is printed. Keep good sf coming.

Gerald D. Barnett
760 South Sixth Avenue
Canton, Illinois

"WHY NO MORE SHAVER MYSTERY?"

Dear Editor:

I have been an ardent and faithful fan of **AMAZING STORIES** ever since 1944 when I found an old **AMAZING** mag during a waste-paper drive. In the course of years and stories, I have grown to regard certain authors as "special" and have watched for their works. Richard S. Shaver was, in my estimation, one of the best. In the past couple of years, I haven't seen any of his stories. I would like to know, if possible, what happened? If you could tell me, I would appreciate it. I'm curious, to say the least. By the way, this is my first effort at a fan letter of any sort. So if it's a little stiff that's the reason.

I enjoyed last month's **LAND BEYOND THE LENS** and now the sequel, **THE GOLDEN GODS**, is wonderful. I was curious to know if Flannigan made it. Now I know how it turned out. "The Man Who Bought Tomorrow" was slow. I didn't think it was good as it might have been. "Battle of the Howling Hatchet"—a story of a military operation, with details. Action-packed, at least. "Murder on Mars". Glad to see Glenn Scott and his crew back. Always enjoy a good planet story. "The Dog with the Weird Tale" is, to say the least, disillusioning. I have always been a dog lover and am, at this time, a companion to a beautiful airedale. But it was a good story. "Master of the Universe" seemed to me too cut and dried. I guess I like action and a personal plot to every story. Well, you now have my very first and, I must admit, poor attempt at a fan letter. If you can answer my letter about Mr. Shaver, I would be obliged.

Vera Nehring
2966 North West 62nd Street
Miami, Florida

Several times we've explained in this department why stories by Richard S. Shaver no longer appear in the pages of *Amazing Stories* and *Fantastic Adventures*. It goes something like this: at one time the bulk of *AS's* pages were filled with that type of fiction—so much so, that the majority of readers began to complain. When it became evident that a change was imperative, we made it! This does not mean Mr. Shaver's stories are not welcome here; it simply means that fiction in the so-called Mystery category has worn out its welcome!

—Ed.

THE SHOOTING CRAB

DAVID MOORE

THE INTERSTELLAR origin of the cosmic radiation which bombards the Earth continuously has been a very difficult problem for science to solve. An extremely interesting report has come from Japanese physicists and astronomers which indicates that an answer of sorts has been determined. Prior to, and during, the war, these scientists made cosmic ray measurements in a deep tunnel, the Shimizu, into which only the very strongest of cosmic rays penetrated.

To their surprise, directional measurements of the cosmic rays disclosed that the famed Crab Nebula, which is essentially a quiescent, exploded nova star, was the apparent source! To correlate the picture further, subsequent radio-wave measurements made in recent years have shown that the Crab Nebula is also one of their major sources! This seems a startlingly suggestive linkage; cosmic rays of the most penetrating type and radio waves both emanate from the same stellar region!

The suspicion is of course that the nova star, exploding and flaring into tremendous activity, has generated these radiations which we now detect. Since the distance of the Crab Nebula is such that light takes four thousand years to reach our System, the actual energy releases may be that old. No one suggests that energy of such a fantastic level is of any origin other than the explosion of such powerful cosmological matter; to think that any life form could generate such power is inconceivable. But inevitably some romanticist will have to make the suggestion. If there could be any truth in it, the Crab Nebula would be a nice place to stay away from—cosmic rays are deadly even over this distance...

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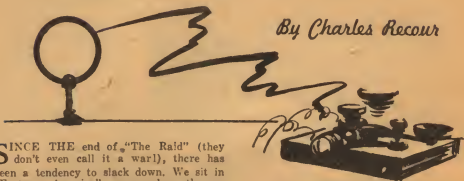
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THE MAN WHO COULDN'T QUIT

AN "AMAZING" VIGNETTE

By Charles Recour



SINCE THE end of "The Raid" (they don't even call it a war!), there has been a tendency to slack down. We sit in "Fortress America", secure beneath our umbrella of rockets and missiles, and think that the Pan-Asians have learned their lesson, that they will never attempt another attack in spite of all their drum-beating. The Raid cost them dearly, we tell ourselves, and they can't hope to summon up enough might to make a second push. Besides, aren't their basic intentions peaceful? Look at the way the "Supreme Ruler" trumps for "Universal Peace."

That's a mockery. That's a joke, a monstrous joke.

The Pan-Asians came mighty close to success and, if we hadn't lopped off their thinking head, their Headquarters Staff, with nearly every operational leader above the rank of Colonel, America today would be another district of Pan-Asia.

The story of the disastrous repulse of the Raid is well known, but the role played in it by a fifteen-year-old boy isn't, and yet—practically—it all hinged on him. Yes, Eddie Fenton, a fifteen-year-old American boy from San Francisco, gave us the breather....

The Fentons sat in the living room of their small home on the eastern edge of the city in quiet despair, listening to the droning sing-song voice of the announcer.

"...curfew is to be enforced throughout the next day...any new subjects of the Supreme Ruler who violate this order will be shot on sight...no private automobiles or public conveyances will be in use... nothing must interfere with the glorious progress of the invincible Pan-Asian soldiery...remain in your homes...."

John Fenton reached over and switched off the radio. He looked at his wife.

"It's too late, Margaret," he said, "we can't get out of the city now. They mean what they say. Jim told me they've been cutting up columns of escaping automobiles all day. They've got tanks and rockets all over the place." He looked at his son, Eddie. "Thank God, Louise is at Grandma's in

Denver. I think we'll stop them before then."

His wife looked at him courageously. "We'll make out all right, John," she said. "It's Eddie I'm worried about."

"Aw, Ma," Eddie objected, "quit worrying. I'll find a way for us to get through these dirty rats." He said it so sincerely and forcefully that Mrs. Fenton couldn't help smiling at her husband.

Suddenly there was a knock at the door. It was hard and peremptory, insistent and demanding.

"Pan-Asians?" Mrs. Fenton breathed. Her husband nodded.

"Remember," he said, "don't make them mad, they'll kill all of us. Got that, Eddie?" Eddie nodded, but there was hatred and fury in his face.

Mr. Fenton opened the door. A short, stocky Pan-Asian soldier stood outlined in it. He grinned at John Fenton.

"You Fenton?" he queried. John nodded. "You come 'long. You work on telephone system. Got to make repair." He gestured casually with the machine rifle cradled in one arm. "Come fast."

"Don't go, John!" Mrs. Fenton said shrilly and abruptly. "They'll kill you, John!" The Pan-Asian stared at her. Calmly he lifted his gun and shot her in the face.

John Fenton went white and he lunged at the Pan-Asian. The soldier shot him once, and his body made a plopping sound as it hit the concrete porch floor. The soldier shrugged and turned away.

It all happened so fast Eddie Fenton didn't appreciate what he'd seen for a moment. He stood looking at the crumpled bodies of his parents in numb horror. Evidently the soldier hadn't seen him, for he had turned and was walking down the street, apparently intending to rejoin a car-unit to which he was attached.

In that ten seconds, Eddie left adolescence far behind and became an adult.

Something happened within him. He ran upstairs to his bedroom, dashed into the closet, and picked up his twenty-two rifle, a present from his Dad, given just a short year ago. His breath came in sobs, sobs of anger, hatred, fear. He could see the soldier who had just killed his parents, evidently waiting for his pick-up, clearly outlined in moonlight a mere hundred feet away.

Eddie didn't hesitate. He picked up the rifle and drew a bead on the soldier's back. Without even trembling he pulled the trigger twice, and he watched the stocky body fall to the pavement. Then, as if he'd known for years what he was going to do, he dashed out of the house, first seizing a pistol from his father's desk....

That night Eddie Fenton saw the enemy. He saw him in companies and battalions. He saw tank units and hundreds of trucks. Overhead the sky was full of rocket planes; occasionally furious air battles would take place. Those Americans who were still in the city stayed in their homes, and it was easy for him to work his way toward the dock area without being seen. No one saw the fifteen-year-old boy or, if anyone did, he paid no attention.

Eddie knew what he was looking for. He ignored the furious activity of the soldiery. For hours he roamed from one place to another, and then he spotted what he wanted. One building, a long, low warehouse, was a beehive of industry. Pan-Asians were coming and going continually and the important thing, Eddie noted, was that they were all officers. Frequently squads of soldiers would drag bundles of cable into the building. Eddie knew what he was looking at. This building was Headquarters for the Pan-Asian assault. Once a fleet of huge cars, escorted by tanks, rolled up and dozens of important figures (judging by the deference with which they were greeted) entered the building.

Eddie racked his mind for a way to do something about this. But then he realized he could do nothing. No one man could get through the heavy cordons of troops, the tanks, the machine-gun emplacements. And if he did, what damage could he do?

By now Eddie knew the location as well as his name. He decided to get away from there before it became impossible to do so. He abandoned the rifle. If he were seen, it would mean his instant death. But he clutched the pistol closely in his pocket. He headed right back toward his home, fear that he wouldn't make it clutching with icy fingers at his heart.

But he did make it. The one time he was stopped, by a lone Pan-Asian sentry, he shot the man twice and ran.

The sight of his parents, still lying sprawled where they had fallen, unnerved him momentarily, but then he caught hold of himself. His face was set in a mask of decision. He dashed upstairs to his attic room. The radio equipment cluttering the room was intact, dormant, but ready to

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operate at the touch of a switch. He flipped on the filaments, but nothing happened. Puzzled, he wondered, and then realized that there was no power. The Pan-Asian had seen to that—if American bombers hadn't.

He turned to his emergency Net equipment, a little twenty-watt also rigged to his short-wave antenna. Powered by two storage batteries always recharged by an automatic charger, the set was waiting to hum.

His fingers manipulated the key wildly. "Calling American Army Intelligence...", he keyed out...and in two minutes some monitoring amateur picked him up and caught a relay bank of the Net. In another minute he was through to an officer, pouring out his story, identifying himself and crying for immediate action, cursing that

the key made things so slow.

He got his story across, but not before a whisper of his frequency had been caught by a Pan-Asian monitoring team with directional antennae. Five minutes later they were there, and they cut Eddie Fenton to ribbons with a machine-pistol blast. He never knew what happened.

But we do. An atomic warhead in a missile destroyed nine tenths of the vast Pan-Asian High Command and the result was that the American counterattack succeeded perfectly, repulsing the Pan-Asians from American soil in a matter of days.

But the Pan-Asians still wait...and Eddie Fentons are not everywhere...remember what might have happened if the vastly superior Pan-Asians hadn't lost their "brains" because of Eddie Fenton....

THE END



THE MIRACLE TUBE

IF HISTORIANS are going to tag any one special event of the years 1945—1952, that event will be the practical development of the "transistor". Reams have been written on this miraculous gadget, but even at that not enough has been said to show how really important it is.

The transistor is going to replace the vacuum tube!

To realize how important that statement is and what enormous implications it has, you have to reflect on the fact that the greatest invention of modern times is the vacuum tube, the plain ordinary radio tube so familiar to everybody. The vacuum tube has changed the course of civilization. It's given us world-wide instantaneous communication, radio television, telemetering, induction heating gadgets by the thousands and, above all, calculating machines and control devices which one day will free men from "work" in the conventional sense of the word. Is it any wonder then that the vacuum tube is such a fantastically amazing product?

Radio tubes are complicated things. Little glowing wires suspended in vacua or in gases, located near plates and grids, they are able to control gigantic currents or detect the feeblest traces of a minute electrical impulse. Marvelous as they are, they also are notably inefficient, requiring lots of auxiliary equipment, heating energy and wire.

The miraculous "transistor", on the other hand, is nothing but a button of a weird metal, "germanium", touched by three tiny wolfram wires. This simple combination does everything a vacuum tube does—and

almost as well. In a little while, after the lab boys get to work, it'll do everything better.

The transistor is really a vacuum tube in performance, the difference being that it is much simpler to construct, requires no vacuum or bulb, is as compact as a match-head, and requires no source of electrical heating current. In other respects it behaves precisely like a conventional radio receiving tube, and may be used as a substitute directly in most common circuits in use today. Experimentors have even built radio receivers and TV sets without a single vacuum tube except the inevitable cathode ray oscilloscope.

So far the transistor has some limitations; it cannot handle very large amounts of power—which eliminates it from the broadcasting angle. But that weakness may be licked after a while, too.

Since it requires no heating source and hence radiates but a tiny amount of heat energy, it can be packed in quantity in minute spaces. The result is that an ordinary "mechanical brain", which may need a room to house it and a small river to cool it, can be put into a space no bigger than a desk. Also, the life span and reliability of the transistor are tremendous, sometimes measured as ten times that of a radio tube.

The transistor is not a cure-all, in spite of its usefulness. Rather, it can be looked upon as another step forward in the astounding progress of electronics, one which is going to be of the utmost importance to every one of us.

—Jack Winter

IN THE BEGINNING ...

By Peter Dakin

GEORE GAMOW, the famous theoretical physicist and astrophysicist, periodically expresses amplifications and variations of his basic theories on the history of the universe. But unlike most other theoreticians, he goes right back to the beginning of time! Recently he presented an expanded picture of what he thinks happened after the original "ylem" began to expand ("ylem" is the primordial building-stuff of the universe: protons, radiation, electrons, etc.).

According to Gamow (how he arrives at these ideas is unknown, but they must occur through the most abstruse mathematical reasoning), in the beginning the universe was filled with this "ylem" which, by Sir James Jeans' hypothesis, contracted into atom-building masses and gas-forming quantities, driven and buffeted by the winds of radiation pressure: As an example of the change in density, consider that an ordinary room full of radiation or light energy weighs as much as a single bacterium! After the "ylem" began contracting into a concentrated mass, its density had gone from this up to the point past that of solid iron. Then, after about a calculated thirty million years, stability existed and the universe was at a uniform temperature.

But when this uniformity of temperature had been attained, instability set in, and the Jeans contraction hypothesis set in. This formed our galaxies and island universes. After a time the stars formed within the galactic clusters and eventually fierce visible radiation took place.

Gamow believes that the process of atomic-energy releases based on the hydrogen cycle will go on within the stars and this will continue until their energy is used up and they explode into nothingness. This fate should overtake our Sun some forty billion odd years hence!

It is a miracle that such hypotheses can be conceived. What validity and truth they may have is of course questionable, and it is probable that the ideas will be modified considerably with time. Even the most speculative of scientists (and Gamow enjoys speculation!) concedes that the present state of our knowledge is still insufficient for any over-all picture of the basic nature of creation. Nevertheless, the very fact that such a hypothesis can be constructed is a tribute to the reasoning power of the mind and to the observational power of applied science!

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SLOW DOWN - FAST

By Tom Lynch

AN ANCIENT—and untenable—argument comes up inevitably when rocketships and rocketry are discussed. "How," the scoffers asks disdainfully, "can human beings ever endure the terrific accelerations that accompany rocket flight?" Such a question can be knocked apart about fifty different ways. First and foremost, rockets do not use accelerations and decelerations which are very high—skyrockets, yes, but not regular liquid-fueled rockets. Secondly, the human body, when properly cushioned, can take accelerations which are simply unbelievable.

Flyers are frequently subjected to accelerations of three and four G's and they don't even "black out" at seven and eight G's if they're properly cushioned and arranged so that the blood can't drain from their brains. This usually involves a "G-suit", a pressurized rubber fabric covering which prevents the skin, flesh and tissues from distorting under the severe inertial forces.

At an Air Force testing center they've discovered some astonishing facts about the accelerations the human body can stand. They've built a railroad rocket to which a man can be strapped. It's a rocket-propelled car—and a rocket-stopped car. In one experiment they decelerated the car—with a man in it—from a hundred and twenty miles an hour to zero—in thirty-one feet. That's equivalent to about forty-five G's. Every part of the man was encased in a harness designed to absorb shock and cushion flesh. That's about seven times as much deceleration as any human being has ever taken and lived to tell about. The man was completely unharmed.

Nothing could answer more completely the effects of G's on the human body. And since no rocket will ever involve accelerations or decelerations even approaching such figures, the worry on that score is eliminated.

To those who worry about blacking out, the answer is simple. Since rockets will be remotely controlled on the initial stages of take-off, it doesn't make any difference whether or not the pilot is conscious. If it were necessary to have a conscious pilot—and it isn't!—suitable harness and cushioning could be devised to provide the necessary easing and preserving of the blood in the brain.

If rockets don't go anywhere, it still isn't going to be a matter of G's—men have taken forty five of 'em...

URANIUM IS NOT ENOUGH

By Ralph Cox

DESPITE the startling successes of modern atomic energy, it is rarely realized in just what a rudimentary stage the science of nuclear fission is. At present, Uranium 235, which is but a fraction of one percent of the Earth's total uranium, can be used for atomic reactions. Two other artificial materials may be literally manufactured from uranium; these are plutonium and Uranium-233. All of these will sustain a self-powered fissionable reaction. Also, the element thorium can be tapped for fissionable material. Using all these sources of atomics, it is estimated that atomic fission can provide ultimately ten times the total amount of energy from all other sources, such as coal, oil, shale, and so on!

The trouble is, with the exception of the fissionable U-235, the other substances must be manufactured by a so-called "breeding process" and, in this process, appreciable amounts of the original substance are used up. The result is that atomic power is limited.

Fortunately, atomic fission is so much in its infancy that nine out of ten scientists would be willing to bet that, in a not-remote time, some means will certainly be found to make much more commonplace materials as fissionable as the familiar uranium. When that happens, the true age of atomic power will be here. It is baffling to the layman to see enormous sums of money being poured into atomic energy plants—with apparently nothing coming out. But something is coming out, something infinitely valuable—knowledge!

For example, the hush-hush research being done on the mysterious hydrogen bomb has consequences considerably more important than simply the manufacture of a super-bomb. The basic intention of the researchers is to learn the methods of making the lighter elements, hydrogen and sodium and lithium, fissionable! These substances exist in huge quantities; if they could supply true atomic energy there would simply be no end to the amounts of power and energy available—a world would not rely on scarce uranium compounds.

For this reason, if you want to know how the practical utilization of atomic energy is coming along, watch for the muted and muffled reports seeping from the labs—they're going places with the hydrogen bomb!

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That's Right...

YOU'RE WRONG!

By LEE OWEN

WHEN THE calculus was invented by Newton and Leibnitz independently a couple of hundred years ago, they thrust into the hands of scientists and mathematicians perhaps the most powerful intellectual tool the world has ever known. Almost immediately the calculus was applied, results of theory and utility sprang forth in quantity. The discoverers of the calculus and their associates used the subject mercilessly, advancing mathematics and applied science more in a hundred years than it had advanced in the preceding thousand years!

And the funny thing about it is—fundamentally their ideas were all wrong!

Both Newton and Leibnitz founded the calculus upon the foggiest of notions, on "infinitesimals" and quantities "almost zero". They imagined, both of them, that certain ratios of numbers shrank ever smaller until they were nearly zero and then, in some inexplicable way, limited themselves. This was, of course, sheer nonsense.

A few men of the time, notably Bishop Berkeley and several European mathematicians, clearly showed that, from a theoretical standpoint, the inventors of the calculus didn't really know what they were doing. Modern analysis has proved this criticism to be true. But fortunately the inventors were bold, and they didn't doubt the "ghostly, evanescent infinitesimals" existed. They went ahead and used them and brought forth an immense body of useful knowledge.

Several times, in mathematics particularly, this kind of situation has occurred. The mathematician-inventor can't quite justify his work, but it seems to have a practical application, and that's what matters. Then along come the critics, show how wrong in theory he was, and proceed to lay the correct theoretical foundation. But the inventor, after all, was the important one.

Oliver Heaviside, inventor of the Operational Calculus, worked the same way. When he introduced his subject into electricity a mere fifty years ago and it produced astoundingly successful practical results, the mathematicians pooh-poohed it as being fundamentally unsound. Time has shown that it needed some rigorous handling, but Heaviside's name is now honored wherever electrical engineering or mathematics is taught.

A sort of Renaissance of mathematical thinking is just about due. Let's hope it does not fail to get started, and that it will be credited when it comes!

(Continued from second cover)

a not-too-obscure community known as Brooklyn, where my thoughts over a period of years ran the usual gamut from mibs to baseball to the opposite sex. But science-fiction always overshadowed everything else, from the day I picked up my first copy of *Amazing Stories* toward the tail end of the depression, to the day I brought out the fan magazine *Cepheid*—I wonder if anyone remembers it?—to the day I got my first story-check in 1949.

I guess a writer likes to travel. There just aren't any two ways about it. Anyway, getting back to my years at college, I'd hitch-hike out in various directions every time my poker luck gave me a pile of green stuff large enough. Sometimes I'd be gone for two or three weeks at a time, sometimes more. My Dean's List rating at school permitted unlimited cuts, but I know for a fact that the college officials didn't relish the idea: they had me on the carpet for it more times than I'd care to remember.

After a while, the trips got uni-directional. I'd thumb my way the four hundred miles from Tidewater, Virginia, to New York for a surprise visit with the gal-friend. Before I knew it, the thing became a habit and, after I received my sheepskin in forty-nine, I didn't waste time. Just a year to get some capital together, and then we were married. It was the best habit I ever developed.

We live in Queens or, as my kid-brother-in-law tells me, "within spitting distance of the New York City line". I like to write five days a week, from nine to two, and then, if the weather's nice, my wife and I loll around on the beach, or go fishing, or play a fast game of tennis at one of the nearby state parks.

It's a fine life.


As a matter of fact, I consider myself lucky. I'd always wanted to write, and always wanted to write science-fiction. I work at it now full-time, and I enjoy every minute of it. You get a wonderful feeling when you know your work is what you always wanted it to be, and when you know that it leaves you with enough time for the good things in life, for all the little things that add up to happiness with a capital H—riding a fast horse on the beach at midnight, tinkering around at amateur astronomy because it happens to be your hobby, making Jones' Beach your stamping ground in the summertime, maybe hopping an air-coach to the calm and quiet of Florida's West Coast in the winter. . . . Well, you get the idea.

That's enough for the present, and I hope it continues while I try to turn out a better page of science-fiction every time I sit down at my typewriter.

I've got a long way to go before I reach my pipe-and-slippers days, but I know what I'd like to see then. A world which takes the visions and dreams which are the stuff of science-fiction and uses them not for war but for peace, a world in which all the wild-eyed ideologies which go hand-in-hand with totalitarianism are thrown overboard in favor of our own good Western tradition of freedom, a world in which we ply the vastness of interplanetary space with the wings of atomic power. . . .

And me, what will I be doing then? Why, with all of you out there I'll be trying to come up with something which will make the atomic spaceship obsolete! Could be, too.

EDITOR'S NOTE: Milt, whose novel *Earthbound* has just been published, recently went into the army.



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